

1912.



City and County of Bristol.

ANNUAL REPORT

OF THE

Medical Officer of Health.

SPECIAL REPORT

ON

WATER SUPPLY.

Printed by Order of the Health Committee.

BRISTOL:
JEFFERIES, SONS & CO., PRINTERS.

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HEALTH COMMITTEE.

1912.

The Right Honourable The Lord Mayor :

CHARLES JAMES LOWE, ESQ.

Chairman :

Councillor COLSTON WINTLE, M.R.C.S.

Deputy Chairman :

Councillor FRANK MOORE.

Alderman TERRETT	Councillor S. T. MARTIN
Councillor HENRY ANSTEY	„ W. G. POPE
(Chairman of Finance Sub-Committee)	„ W. SAISE
„ A. DOWLING	„ J.S.G.W.STROUD
„ E. M. DYER	„ G. THOMPSON
„ A. FROUD	„ C. J. THORNE.
„ H. J. MAGGS	„ G. S. WILLMOTT

CITY OF BRISTOL.

HEALTH DEPARTMENT, 1912.

Medical Officer of Health : D. S. DAVIES, M.D., L.L.D., D.P.H.

Chief Inspector : J. W. KIRLEY.

Superintendent Inspector : †*T. LOWTHER.

District Inspectors (12) :

G. E. BUSH	Bedminster W.	*†T. J. CROFTS St. Philip
*H. HASELL	Horfield	*F. KIRLEY Stapleton and
*J. WILKINSON	Clifton	St. George, N.W.
*H. J. KIRLEY	Cotham	*†§A. W. GRIFFITHS Avonmouth
*J. T. LYONS	S Geo. E.	*G. BEST Westbury-on-Trym
*†F. R. SLADE	St. Paul	*E. J. BURR St. George, S.W.
*†A. E. KING	Knowle and	and Redcliff.
	Bedminster, E.	

Inspector of Common Lodging Houses and Bakehouses :

*S. O. DIMOND.

Inspector of Dairies, Cowsheds and Milkshops :

*†H. C. LEAT.

Inspectors of Slaughter Houses, Meat and Fish :

S. THOMAS.

| *§A. GITSHAM.

Inspector of Workshops, &c. : *W. J. WREFORD.

Inspector of Tenement Houses : *†J. B. PASKE.

Lady Health Visitors : { Sister DIMOND, C.M.B., H.V.Cert., R.S.I.
} Sister PALMER, C.M.B., H.V.Cert., R.S.I.

Chief Clerk : L. W. A. STATTON.

Statistical Clerk : W. N. BROWN.

Clerks :

C. W. M. VINCENT, E. E. MASTERS, J. G. WATSON, H. DAVIS,
 F. D. SAINSBURY, C. BRYANT.

CITY HOSPITALS.

General Medical Superintendent (Supervisory) :

D. S. DAVIES, M.D., L.L.D., D.P.H.

Visiting Medical Officer at Novers Hill Hospital : G. C. PAULI, M.R.C.S.

Resident Medical Officer at Ham Green Hospital :

B. A. I. PETERS, B.A., B.C., M.B., D.P.H.

PORT OF BRISTOL

Port Medical Officer of Health :

D. S. DAVIES, M.D., L.L.D., D.P.H.

Assistant Port M. O. H. : J. C. HEAVEN, M.R.C.S., D.P.H.

Chief Port Inspector : S. O. DIMOND.

Port Inspector : A. DICKENS.

Assistant Port Inspector and Boatman : J. REX.

Inspector of Foods : *||J. A. ROBINSON.

Master of S.S. "Luath" : M. BIDDLE.

‡ Surveyor's Certificate Sanitary Institute. * Inspector's Certificate, Sanitary Institute. † Registered Plumber. § Meat Certificate, Sanitary Institute.
 || London Inspector's Examining Board Certificate; Meat Certificate, Sanitary Institute; Meat Certificate, Liverpool University.

PUBLIC HEALTH OFFICES,
40, PRINCE STREET, BRISTOL.
June, 1913.

MY LORD MAYOR AND GENTLEMEN,

The year 1912 was remarkable chiefly for its inclement weather, which in turn contributed to some very favourable mortality records. Introduction of Small-pox of mild type led to six months of careful watchfulness, but to no developments of importance.

The Health Department assumed control of the administration of the Midwives Act, and made a useful beginning with two Health Visitors in carrying out the provisions of the Notification of Births Act, which would provide sufficient work for eight or ten.

The year witnessed also the inception of a great adventure, consolidating and extending under the National Insurance Act measures toward the control of Tuberculosis which had already been largely adopted. Whether this control can, under such extension compass extinction, depends upon the validity of the various assumptions as to the nature and causation of the disease upon which these measures are based, not least on the relative value of infection or predisposition in determining its manifestation: in these circumstances it is a matter for congratulation that, though much money will be spent, perhaps, in over-confidence, on action; some, at least, is reserved for research.

I am, My Lord Mayor and Gentlemen,
Your obedient servant,

D. S. DAVIES, M.D., L.L.D.,
Medical Officer of Health.

REPORT.

PART 1.

Population and Acreage.

The estimated population of the City at the middle of 1912 was 359,400 persons, upon an area of 17,460 acres.

Table A.**
Showing Population, Acreage, and number of Persons per Acre
(Density) in each of the Registration Sub-Districts of Bristol
for 1891, compared with the same data for 1912.

Registration Sub-Districts, 1891. (Census Year)	Average	Popula- tion middle of 1891	Density 1891	Registration Sub-District, 1912	† Acreage	Estimated Popula- tion, 1912	Density 1912
S. Mary Redcliff -	170	9,287	54·6	} † † ** Bristol Central	719	37,582	52·2
Castle Preeincts -	119	5,558	46·7				
S. Paul - -	148	19,046	128·6				
S. James - -	68	7,817	114·9				
S. Augustine -	250	13,788	55·1	**Bedminster -	1,952	61,720	31·6
Bedminster -	992	45,812	46·1	Knowle - -	1,108	21,098	19·0
				**Clifton - -	1,269	41,971	33·0
Clifton - -	921	29,361	31·8	Ashley - -	2,157	48,091	22·2
Ashley - -	434	24,190	55·7				
Westbury - -	692	15,540	22·4	**S. George - -	1,994	59,100	29·6
				**S. Philip - -	604	50,103	82·9
S. Philip - -	744	51,650	69·6	Stapleton - -	2,573	26,780	10·4
				Westbury-on-Trym - -	5,084	12,955	2·5
Bristol City (1891)	4,533*	222,049	48·93	Bristol City (1912)	17,460	359,400	20·58

* Ordnance calculation, including water areas.

† Census, 1911.

‡ The Registrar General of Births, Deaths and Marriages, ordered and declared, that on and after 1st April, 1904, S. Augustine Sub-District shall be united with S. Paul Sub-District, and the enlarged Sub-District so formed, shall be called and known as S. Paul and S. Augustine Sub-District.

|| The Registrar General of Births, Deaths and Marriages, ordered and declared, that on and after 1st December, 1905, the S. Mary Redcliff Sub-District shall be united with S. Paul and S. Augustine's Sub-District, the enlarged Sub-District to be called and known as Bristol Central Sub-District.

** Considerable alterations were again made in the Registration Sub-Districts in April, 1909.

CITY OF BRISTOL.

Population, estimated to the middle of 1912.

Registration Sub-Districts.			Estimated Population.	
Clifton	41,971
Bristol Central	37,582
Bedminster	61,720
Knowle	21,098
St. George	59,100
St. Philip	50,103
Stapleton	26,780
Ashley	48,091
Westbury-on-Trym			...	12,955
Total			...	359,400

POPULATION AT GROUPS OF AGES.

				Persons.	Males.	Females.	
All Ages				...	359,400	164,650	194,750
Under 5 years				...	40,152	19,841	20,311
5 and under 10				...	39,335	19,507	19,828
10	„	15	...	38,409	18,916	19,493	
15	„	20	...	37,527	17,149	20,378	
20	„	25	...	35,689	15,141	20,548	
25	„	30	...	31,241	13,733	17,508	
30	„	35	...	26,746	11,991	14,755	
35	„	40	...	23,154	10,600	12,554	
40	„	45	...	18,987	8,476	10,511	
45	„	50	...	16,748	7,573	9,175	
50	„	55	...	14,134	6,449	7,685	
55	„	60	...	11,253	4,946	6,307	
60	„	65	...	9,318	3,970	5,348	
65	„	70	...	6,857	2,809	4,048	
70	„	75	...	4,889	1,856	3,033	
75	„	80	...	2,896	1,035	1,861	
80 years and upwards				...	2,065	658	1,407

NOTE.—The above figures are calculated from the age distribution as returned at the Census of 1901. Age statistics for the recent census are not available.

(Figures supplied from the Registrar General's Office).

CENSUS RESULTS—1911.

We are enabled to supplement the statistics already published with regard to the population of Bristol, as shown at the 1911 census, by the returns for the several registration sub-districts into which the City is divided. These are interesting as showing the parts of the City in which there have been increases or decreases of population as compared with the census of 1901. As already stated the total population in the registration district of Bristol at the 1911 census was 357,059, as compared with 339,042 in 1901, an increase of 18,017.

The Sub-Districts.

The comparative figures for the nine registration sub-districts, as given in the preliminary report of the Registrar-General, are as follow :—

		1901.	1911.	Inc.	Dec.
Clifton	... ..	46,445	42,466	—	3,979
Bristol Central	... ..	45,662	38,485	—	7,177
Bedminster	... ..	56,959	61,176	4,217	—
Knowle	... ..	12,645	20,150	7,505	—
St. George	... ..	53,629	58,478	4,849	—
St. Philip & St. Jacob		51,225	50,215	—	1,010
Stapleton	... ..	21,236	26,149	4,913	—
Ashley	... ..	41,790	47,378	5,588	—
Westbury-on-Trym	...	9,451	12,562	3,111	—
				30,183	12,166
				18,017	
				increase.	
Totals	... ..	339,042	357,059		

Changes since 1901 Census.

It is necessary to explain that in some cases the changes are accounted for by alterations effected in the areas of the sub-districts between 1910 and 1911. S. Augustine's has been taken away from Bristol Central and added to

Clifton, the Redland Ward has been transferred from Clifton and added to the Ashley sub-district, and St. James and St. Paul have been taken out of the Ashley district and added to the Central. These are some of the changes made. But so far as Knowle, Bedminster, St. George and Stapleton are concerned, the increases are genuine, and show that during the past ten years there have been considerable developments in those portions of the city.

How the Sub-Districts are Constituted.

An explanation as to the constitution of the sub-districts may be added. In the Clifton sub-district are comprised the municipal wards of Clifton North and South, and St. Michael and St. Augustine; Bristol Central is made up of the wards of St. Paul, St. James, Central East, Central West, and Redcliff; Bedminster consists of Bedminster East and West and Southville wards; Knowle of the Somerset Ward; St. George of St. George's East and West and No. 2 polling district of Easton Ward; St. Philip and Jacob of St. Philip and Jacob North and South Wards, and No. 1 polling district of Easton Ward; Ashley of the Horfield District and Redland Wards; Stapleton of the Stapleton Ward; and Westbury-on-Trym of the municipal ward bearing that name.

GENERAL AND VITAL STATISTICS.**Population.**

	Area in Acres.	Population (Estimated)	Rateable Value.
City of Bristol, 1897	4,661	232,242	£1,153,311
Additions of 1897	6,756	85,800	£246,815
Additions of 1904	5,347	13,443	£69,560
City of Bristol, 1912	17,460	359,400	£1,852,119

This table shows that the City covers not quite four times the acreage which it covered in 1897, and is more populous by 126,158 persons. The City Medical Officer of Health has inherited the duties and responsibilities of the Medical Officers of Health of this added City; considerable economy has thus been effected in the medical administration, as the salaries of the various medical officers have lapsed.

There is no salaried Assistant Medical Officer to help in either City or Port work, but the occasional Medical assistance, required in emergency, is paid for by fees for work done. The various extensions have resulted in the displacement of five part-time Medical Officers of Health, whose districts have been absorbed.

The districts included three Local Board Districts, each in charge of a part-time Medical Officer of Health, and parts of two Rural areas.

The additional work thus devolving on the Medical Officer of Health, includes:—

Additions to City Work.

CITY.—In 1897 the area of the City was increased by 6,756 acres, and the population by 85,800 persons.

In 1904 the area was further increased by an addition of 5,347 acres, and the population by 13,443.

In addition, the National Insurance Act of 1911

doubles the existing responsibility upon the shoulders of the Medical Officer of Health.

Additions to Port Work.

PORT.—In 1897 responsibility for the Gloucester Port work, under the Cholera, Plague and Yellow Fever Regulations, was imposed by special order upon the Bristol Port Medical Officer of Health.

In 1907 the Public Health (Regulations as to Food) Act imposed all responsibility for the inspection of Imported Food for the whole Port of Bristol upon the Port Medical Officer of Health. This had hitherto been carried out only in Ports under a whole time Port Medical Officer of Health.

No salaries are assigned for any of the above added duties.

Births.

The births registered in Bristol in 1912 were 7,681, of which 270 were returned as illegitimate, a percentage of 3·5.

The birth rate for the year was 21·3, an increase on the rate of last year, which was 21·0; the rate has since 1882 shown an almost continuous decrease. (Table B.) The rate for the 95 great towns in 1912 is 24·9.

The excess of births over deaths during the year 1912 (*natural increase of population*) is 2,787.

Marriages.

2,933 marriages took place within the Borough of Bristol during 1912, compared with 2,763 in the year 1911 and 2,670 in the year 1910. The annual marriage rate per 1,000 is thus 8·1 compared with 7·6 in 1910 and 6·9 in 1911.

Deaths.

4,894 deaths were registered in the district during the 52 weeks ending the 28th December, 1912, of which 73 or 1·4 per cent. were returned as deaths of illegitimate children. The recorded general death rate for the year, uncorrected for age and sex distribution is 13·61 per

1,000 living, compared with a rate of 15·48 for the year 1911. The death rate recorded for the 95 great towns in 1912 is 13·8.

Infant Mortality.

Of the 4,894 deaths, 789 were of infants under one year. The proportion of these deaths to every 1,000 births (infant mortality) was 102·7, compared with a rate of 142·8 for the year 1911, 90·3 for the year 1910, 101·0 for the year 1909, 125·8 for the year 1908, 100·9 for the year 1907, 127·6 for the year 1906, 122·4 for the year 1905, and 133·7 for 1904. The rate recorded in the 95 great towns in 1912 is 101.

The Infant Mortality rate varied thus :—

St. Philip	...	...	127·2
Bristol Central	...	...	119·3
Bedminster	...	...	103·0
St. George	...	...	100·7
Clifton	...	...	98·4
Stapleton	...	...	84·5
Ashley	...	...	73·3
Knowle	...	...	65·7
Westbury-on-Trym	...	...	61·3

In Table B will be seen the annual infant mortality rates in Bristol for the past 25 years.

The highest rates were recorded in St. Philip, Bristol Central (Castle Precincts, St. Mary Redcliff, St. Paul, St. James, St. Augustine), Bedminster and St. George.

The unusual and prolonged summer and autumn rain in 1912 produced the normal effect of decrease in autumnal Diarrhoea, and consequently in the rate of infant mortality, which has been shared by all the great towns.

The Health Committee has appointed two Health Visitors, and the Notification of Births Act was adopted on 12th December, 1912. Both Health Visitors are fully trained and certificated nurses, and hold the Certificate of the Central Midwives' Board, as well as the Health Visitors' Certificate of the Royal Sanitary Institute.

BRISTOL REGISTRATION DISTRICT.

Statement shewing the number of Births and Deaths registered, and Marriages solemnized in this District during the last seven years.

No. of Sub-District	Sub-District and Municipal Ward	Year 1906	Year 1907	Year 1908	Year 1909	Year 1910	Year 1911	Year 1912
1	Clifton —Clifton North, Clifton South, St. Michael & St. Augustine	Births - 697	626	625	671	686	640	655
2	Bristol Central —St. Paul, St. James, Central East, Central West and Redcliff	Deaths - 510	481	488	578	548	605	515
3	Bedminster —Bedminster East, Bedminster West, and Southville	Births - 1043	921	928	924	935	874	802
4	Knowle —	Deaths - 1028	1003	1025	1033	956	1136	1054
5	Somerset Ward	Births - 1999	1938	1740	1742	1624	1579	1607
6	St. George —St. George East, St. George West, and No. 2 Polling District of Easton Ward	Deaths - 926	793	781	686	564	747	679
7	St. Philip & Jacob —St. Philip and Jacob North, St. Philip and Jacob South, and No. 1 Polling District of Easton Ward	Births - 533	513	500	487	466	447	426
8	Stapleton —	Deaths - 193	182	180	146	153	161	159
9	Ashley —	Births - 1721	1544	1616	1550	1512	1421	1409
	Horfield, The District, Redland	Deaths - 630	561	624	550	534	692	607
	Westbury-on-Trym —	Births - 1570	1486	1397	1451	1386	1269	1244
	Westbury-on-Trym Ward	Deaths - 712	555	652	512	476	676	541
	TOTALS —	Births - 656	668	674	641	609	567	560
	Births -	Deaths - 789	819	865	822	855	912	822
	Deaths -	Births - 911	923	825	801	805	712	767
	Deaths -	Deaths - 423	423	434	444	347	472	446
	Deaths -	Births - 335	301	321	272	245	260	278
	Deaths -	Deaths - 137	102	104	125	105	144	122
	TOTALS —	Births - 9404	8920	8626	8539	8268	7769	7748
	Births -	Deaths - 5348	4919	5153	4896	4538	5545	4945
	Deaths -	*Marriages -	3001	2806	2670	2670	2763	2933
	*MARRIAGES AS ABOVE—	Church of England	1613	1619	1489	1540	1565	1652
	Chapels and Register Office	1077	1150	1068	1063	1001	1073	1132
	Quakers -	4	3	3	4	5	2	3
	Jews -	2	2	7	4	7	6	5
	Authorised Persons	97	97	109	110	117	117	141

REGISTER OFFICE, BRISTOL,
March, 1913.

ALBERT DODGE,
Superintendent Registrar.

Miss Townsend has kindly sent me the following Report :—

BRISTOL SCHOOLS FOR MOTHERS.

The first Bristol School for Mothers, opened on November 5th, 1909, at the Broad Plain Club House, has continued its work steadily during 1912. Regular instruction in Infant Care, Health, Cookery, and Domestic Management, etc., has been given by competent Teachers.

The number of Infants under the care of the School's Medical Officer during 1912 was 90. Number of Women under instruction 110. The Medical Officer reports that the babies are better cared for, fed more regularly, and that the mother takes a more intelligent interest, and are anxious to carry out instructions as to the management of their infants. On two or three occasions the women have been asked to write essays on the subjects dealt with at the medical lectures. Very creditable papers were sent in showing a good grasp of the subject, notably those on "summer diarrhœa" and "infant feeding."

Early in 1912 a second School was opened at the University Settlement, Barton Hill; and is now carried on on similar lines to the Broad Plain School. During the year 89 women have received instruction, and 56 infants are under the care of the Medical Officer. Home Visiting is undertaken by the Warden of the Settlement and a Trained Nurse. Infants requiring special care are visited daily. Courses of Lectures on Infant Care and Health have been given by Miss Symonds (Health Lecturer to the Nurses' Social Union), Miss Fry and others.

A third School is to be opened shortly at the Girls' Club House, Hebron Road, Bedminster.

In order to extend the work of instructing mothers

and supervising infants in Bristol, a "Council of Schools for Mothers and Infant Welfare Association" has recently been formed. This Association is intended to link together all existing Schools, to ensure that they are worked on sound principles, and that all instruction is given by competent teachers. The Association will also endeavour to start new Schools in districts where they are needed. This last is most necessary, as it has been found that the mothers are more efficiently instructed and supervised in small groups than in one large school.

When the Association is in proper working order it is hoped that it will become a central means of communication and co-operation between the Municipal Health Committee and the voluntary agencies for Infant Care. A start in this direction has been made since the adoption by the City Council of the Notification of Births Act, and the appointment of their two Health Visitors. Cases found by the latter to be in need of special care and continued visiting are referred by the M.O.H. to the Secretary of the Broad Plain School. As far as possible these are visited, and the mothers invited to attend the School nearest their homes. Owing to lack of suitable Visitors these visits are confined to a very limited area at present.

F. MARION TOWNSEND.

Other Organisations.

A Mothers' Kitchen has been started in Bristol in connection with the Women's League of Service; the idea being to help the baby through the mother.

Miss L. H. Leonard, assisted by Lady helpers, undertakes the management; and from between Christmas to Easter there was an average of 20 mothers attending.

Seven Chief Epidemic Diseases. (Zymotics).

The rate of mortality for the Seven Chief Epidemic Diseases, viz.: Small-pox, Measles, Scarlet Fever, Whooping Cough, Diphtheria, Fever (Typhus, Enteric Fever, and Simple Continued Fever or Pyrexia) and Diarrhœa was in 1912 0·99 per 1,000 living, compared with a rate of 2·2 in 1911, 0·6 in 1910, 0·9 in 1909, 1·2 in 1908, 0·8 in 1907, 1·6 in 1906, 1905 and 1904, and 1·1 in 1903.

Birth Rate, Death Rate and Analysis of Mortality during the Year 1912.

	ANNUAL RATE PER 1,000 LIVING.										Deaths under 1 year to 1000 births
	Birth Rate	Death Rate		Enteric fever	Small-pox.	Measles	Scarlet Fever	Whooping Cough.	Diphtheria.	Diarrhoea & Enteritis (under 2 years.)	
		Crude.	Correc- ted.								
England and Wales ...	23·8	13·3	13·3	0·04	0·00	0·35	0·05	0·23	0·11	8·53	95
95 Great Towns, includ- ing London ... }	24·9	13·8	14·6	0·04	0·00	0·47	0·06	0·26	0·13	10·88	101
146 Smaller Towns ...	23·8	12·4	13·0	0·05	0·00	0·35	0·05	0·24	0·11	8·03	98
England and Wales, less the 241 Towns ... }	22·5	12·9	12·1	0·04	0·00	0·20	0·04	0·17	0·10	5·54	88
London	24·7	13·6	14·3	0·03	0·00	0·40	0·04	0·22	0·10	12·29	90
Bristol	21·3	13·6	13·3	0·01	0·00	0·42	0·03	0·19	0·13	0·18	102

Mortality at Ages between 5 and 65.

2,238 deaths were returned at these ages.

Mortality amongst Aged People.

1,663 deaths of persons aged 65 and upwards were registered, whose ages averaged 75 years and 2 months.

PREVALENCE OF SICKNESS IN 1912.

Small-pox.

The prevalence and fatality of this disease is here shown for the past 27 years :—

SMALL-POX.

Year.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per cent.
1886	?	?	8	3	?
1887	163	72	13	5	7·9
1888	224	98	26	11	11·6
1889	0	—	0	—	—
1890*	0	—	0	—	—
1891	16	7	1	0·4	6·2
1892	0	—	0	—	—
1893	165	73	20	8	12·1
1894	201	88	16	7	7·9
1895	4	1	0	—	—
1896	42	18	5	2	11·9
1897	10	4	1	0·4	10
1898†	2	0·6	0	—	—
1899	0	—	0	—	—
1900	0	—	0	—	—
1901	1	0·3	0	—	—
1902	4	1	2	0·6	50
1903	46	14	3	0·8	6·5
1904‡	34	9	1	0·2	2·9
1905	13	3	0	—	—
1906	32	8	0	—	—
1907	6§	1·6	1	0·2	16·6
1908	1	0·2	0	—	—
1909	39††	10	9	2	23·0
1910	4**	1	0	—	—
1911	0	—	0	—	—
1912	62**	17	3	0·8	4·8

* Compulsory Notification began. † City Extended.

‡ (City again Extended in 1904. § Including one Port case.

†† This total of 39 includes 35 cases in the City actually notified (one being an Officer of the Cossham Hospital who lived in the County but formed one of the Cossham group); and there were three abortive cases, and one unrecognised case in the East Bedminster group which were not notified. The unrecognised first case in the Cossham outbreak admitted from the Chipping Sodbury Rural District to Cossham Hospital is not included amongst the City cases.

** Including Two Port Cases.

A case of Small-pox was introduced into Bristol (which had remained free from the disease during 1911) in January, 1912, by steamship from Malaga.

As the case was very mild, and the patient "ambulant," some opportunity was afforded for infecting others before he was isolated.

In this way several small outbreaks and some family groups occurred during the first six months of the year, which were dealt with in detail as they arose.

The cases admitted to Hospital, including several suspicious cases sent in for observation, were distributed as follows :—

In January 4, February 18, March 8, April 12, May 7, June 15, July 7, and in August 4.

No further cases appeared from this introduction.

The type of the disease was mild, leading to some difficulty in diagnosis.

One point of interest was the appearance of a case of Small-pox in a patient in the Medical Ward of a Hospital in the City, to whom the infection was probably conveyed by mediate infection from the outpatient department. Sickening typically on Saturday, 27th January, he was removed to the City Small-pox Hospital in the early papular stage, and under advice, the following routine observed :—

BY HOSPITAL AUTHORITIES.—Disinfection of clothes and bedding; re-vaccination of other 12 patients in ward; re-vaccination of Hospital staff; retention of other 12 patients in ward under observation for 20 days; exclusion of visitors.

BY HEALTH DEPARTMENT.—Listing and visiting for 20 days of previous visitors to ward.

Under these conditions, as was to be expected, nothing further happened.

Nothing deserves special mention in this connection except the increasingly unsatisfactory condition of the accommodation at Novers Hill for Small-pox, but that is dealt with in another place in my report as General Medical Superintendent.

In some ways an epidemic of a couple of thousand cases might prove of service to the City: it might, at any rate, improve the Hospital accommodation.

On November 30th, a case came by steamer from Quebec and Montreal; was removed to Hospital, and discharged cured on January 2nd, 1913.

No further cases occurred.

Scarlet Fever or Scarlatina.

During the year 1912, 580 cases of Scarlet Fever were notified, and 12 deaths occurred, giving a case mortality of 2.0 per cent.

The prevalence of, and fatality from, this disease for the past twenty-three years, that is to say, since notification commenced, is shown here. Columns 2 and 4 should be used in comparing different years, as they are adjusted for the varying populations.

SCARLET FEVER.

	1	2	3	4	5
Year	Cases Notified	Attacks per 100,000 Living	Deaths	Deaths per 100,000 Living	Case Mortality per Cent.
1890	559 ^{*2}	253	40	18	7·1
1891	888	400	37	17	4·1
1892	1,442	644	47	21	3·2
1893	1,245	553	35	16	2·8
1894	485	214	16	7	3·2
1895	562	252	16	7	2·8
1896	1,352	586	59	24	4·3
1897	511	220	18	7	3·5
1898*	382	120	14	4	3·6
1899	697	217	13	4	1·8
1900	1,971	606	39	12	1·9
1901	2,206	670	36	10	1·6
1902	2,724	793	66	19	2·4
1903	2,168	639	49	14	2·2
18904§	1,258	366	36	10	2·8
2905	1,085	302	39	10	3·5
1906	1,019	280	27	7	2·6
1907	886	240	26	7	2·6
1908	486	127	10	2	2·0
1909	692	183	12	3	1·7
1910	1,216	317	12	3	0·9
1911	953	266	16	4	1·6
1912	580	161	12	3	2·0

* City Extended. § The City was further Extended in 1904.

*2 Notification commenced on February 12th, 1890, so that the case mortality for this year is probably overstated.

The type of disease has again been mild, and the mortality is the lowest recorded, excepting that for the year 1908, and is the same as the rate for the years 1909 and 1910.

The attack rate is the lowest recorded, with the exception of the rates for 1898 and 1908, since Notification commenced.

The distribution of attacks by age is shown below :

0-1	1-5	5-15	15-25	25+	Total.
4	133	400	35	8	580

The distribution of the disease in each quarter of the year is shown in the following table for each Registration Sub-district of the City :—

SCARLET FEVER.

REGISTRATION Sub-District.			CASES NOTIFIED.				Year 1912	Attack Rate per 100,000 Living.
			1st Qr.	2nd Qr.	3rd Qr.	4th Qr.		
Ashley	—	—	35	22	16	23	96	199
Bedminster	—	—	18	16	12	30	76	123
Bristol Central	—	—	12	5	17	13	47	125
Clifton	—	—	5	12	16	16	49	116
Knowle	—	—	10	8	11	8	37	137
S. George	—	—	14	15	19	29	77	130
S Philip	—	—	10	11	9	25	55	109
Stapleton	—	—	24	24	18	27	93	347
Westbury-on-Trym	—	—	9	1	5	6	21	162
Public Institutions	—	—	5	6	3	1	15	—
Not belonging to City	—	—	5	3	6	—	14	—
Total	—	—	147	123	132	178	580	161

The attack rate per 100,000 population was lowest in St. Philip, Clifton, Bedminster, and Bristol Central, and highest in Stapleton.

Isolation in Scarlet Fever at a public Hospital is not needed for the children of persons in good circumstances, who will indeed do as well or better at home, but Hospitals have their use in securing isolation in cases which cannot possibly receive adequate attention at home.

The prevalence of Scarlet Fever bears no relation to the "Sanitary" condition of the district. It is a contact-spread disease, and is largely kept alive by mild cases which may be unrecognized ("missed cases,"—"carriers.") The influence of infected clothing and infected premises in this disease has probably been over-estimated, while the influence of "personal" infection has been much under-estimated. Schools may have considerable influence in the spread of Scarlet Fever, but this is minimised by the strict watch kept upon the notification returns in connection with school attendance.

The difference in the fatality of Scarlet Fever forty years ago and now is quite remarkable. For instance, in 1863 and the following year over 1,100 deaths occurred from this disease. In 1869 and 1870 over 900 deaths occurred, in 1875 and 1876 over 700, and in 1880 and 1881 nearly 400. In 1886 and 1887, 300 deaths occurred. The next epidemic was in 1896, when 59 deaths resulted. In 1900 a larger epidemic caused only 39 deaths, in 1901 a still greater prevalence of the disease resulted in only 36 deaths, while in 1902 the deaths rose to 66. The population in 1912 was 359,400 compared with 158,000 in 1863. If there had been a similar loss in regard to population as there was in the epidemic of 1863, the number of deaths in 1912 would have reached 2,500 instead of being only 12.

The type of disease, judged by the case mortality, is

much milder now than it was 40 years ago, hence it is argued that we may revert to the fatal epidemics which were then experienced. But the favourable alteration in type is probably, in large part, a result, not of general "sanitary" improvement, but of the development of that part of Public Health work which secures removal and care in Hospital for those patients who, if kept at home amongst large families in small houses, would, by accumulation of infection, lead to septic and fatal forms of the disease. It is in this, I believe, that much of the value of a judicious use of isolation hospitals consists; for in large cities it is not to be expected that hospital isolation can succeed in blotting out a disease which is endemic and is perennially kept going by personal infection through undiscovered cases. It is noteworthy that the improvement in the fatality returns has been maintained in spite of the unfavourable factor in recent years of increasing school attendance.

The view may be advanced, too, that, in comparison with races that have not been subjected to selection by the constant presence of the Scarlet Fever organism in the environment, we have acquired, as a race, a very high resisting power; short of complete immunity, but so marked that the small mortality caused by individuals succumbing in the process of acquiring immunity does not materially affect the race.

Complete immunity may never be attained, for, as individuals must always vary, some will inherit less capacity for acquiring immunity, and so there will remain some mortality as long as the selection, that is, so long as the disease continues, in order to eliminate unfavourable variations.*

*Cf—"Hereditary characters and their modes of transmission."
C. E. WALKER (ED. ARNOLD, 1910).

Scarlet Fever, 1912.

Some schools were implicated in the spread of infection. The school rooms were cleansed and disinfected. The evidence as to much school infection was not conclusive, but a careful watch was kept upon the school notifications.

One school (Sefton Park) was specially visited and some children who were found to be poorly were excluded until a medical clearance was obtained from their Medical Attendants.

Contact infection amongst associated children at home was probably chiefly responsible for the spread of infection, coupled with a type of disease leading to "missed" cases, which readily carry and distribute infection. In several cases medical aid was not called in until the children were found to be peeling freely, and these children had in some cases been attending school.

Enteric Fever (Typhoid Fever.)

During the year 1912, 79 cases of Enteric Fever were notified, and 7 deaths occurred, giving a case mortality of 7 per cent.

The prevalence and fatality from this disease for twenty-three years past is here shown :—

ENTERIC FEVER.

	1	2	3	4	5
Years	Cases Notified.	Attacks per 100,000 Living	Deaths	Deaths per 100,000 Living	Case Mortality per Cent.
1890* ²	122	55	33	14	27·0
1891	116	52	23	10	19·6
1892	135	60	18	8	13·3
1893	122	51	26	11	21·3
1894	90	39	21	10	23·3
1865	89	39	22	9	24·7
1896	110	47	20	8	18·1
1897	343	147 [†]	47	20	17·4
1898*	113	35	26	8	23
1899	219	68	35	10	16
1900	293	90	44	13	15
1901	281	85	40	12	14
1902	319	93	58	17	18
1903	134	39	21	6	15
1904 [†]	172	50	26	7	15
1905	76	21	13	3	17
1906	120	33	21	5	17
1907	74	20	15	4	20
1908	103	27	10	2	9
1909	66	17	12	3	18
1910	85	22	9	2	10
1911* ³	148	41	18	5	12
1912	79	21	7	1	8

* Extended City. † Milk Outbreak introduced from the County.

*² Notification commenced February 12th, 1890, so that the case mortality for this year is probably overstated.

† City again extended in 1904. *³ Localised Outbreak in S. James,

No estimate can be made as to the number of cases occurring before 1890, the high figures of 1897 are due to the introduced milk outbreak of that year. In 1897 the City, containing 232,242 people was extended, and in 1904 contained 343,204 persons, an increase of 110,962 persons. In 1904 a further extension was made. Allowance in columns 2 and 4 is made for the increase of population year by year, and the figures in these columns should be used for comparison. The attack rate fell very considerably in 1903 and 1904 from the high rate of 1902, and the death-rates (Col. 4) for the years 1903 and 1904 were the lowest recorded up to then.

In 1908 the attack rate rose slightly compared with that of 1907, but the number of deaths, the death-rate and the case mortality per cent. are the lowest then recorded.

In 1909 the attack rate was the lowest recorded since Notification began in 1890, but the number of deaths and the death-rate rose slightly compared with 1908. The rise in case mortality to 18 per cent. suggests that the type of infection was more severe than in 1908.

In 1910 the attack rate was higher than in 1909, but was lower than in any year except 1909, 1907 and 1905, the death-rate was, however, the lowest rate recorded, and the case mortality per cent. was the lowest recorded with the exception of the year 1908.

In 1911 the attack rate was the highest recorded since 1904 owing to the outbreak in St. James, of which a full account appeared in my report for that year, the death rate was the highest recorded since 1906. The case mortality per cent. was the lowest recorded with the exception of the years 1908 and 1910.

In 1912 the attack rate was the lowest rate recorded since Notification began, except the rate for the year

1909. The death rate and the case mortality rate are the lowest recorded in any year.

The distribution of the disease in each quarter of the year is shown in the following table for each Registration Sub-district of the City. The Sub-districts most affected are seen to be St. George and Bedminster.

REGISTRATION. Sub-District.	CASES NOTIFIED.				Year 1912	Attack Rate per 100,000 living.
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.		
Ashley — — —	1	1	—	7	9	18
Bedminster — —	6	2	1	3	12	19
Bristol Central — —	2	4	1	—	7	18
Clifton — — —	6	—	—	1	7	16
Knowle — — —	2	—	—	2	4	14
S. George — — —	4	4	3	3	14	23
S. Philip — — —	4	1	2	2	9	17
Stapleton — — —	—	—	2	2	4	14
Westbury-on-Trym —	—	—	1	—	1	7
Municipal Institutions —	3	—	2	—	5	—
Not belonging to City —	1	2	—	4	7	—
Total —	29	14	12	24	79	21

Enteric Fever is admitted for treatment into the Public Institutions, and 68 cases (7 from outside the City) were nursed in the Royal Infirmary, General Hospital, Ham Green Hospital, Children's Hospital, and Stapleton Workhouse, through the year. With the exception of 12 cases nursed at Clift House in 1897, no provision had been made for this disease in the City Hospitals before July, 1899, and cases, if not admitted to the general Hospitals, had to remain at home.

Report on Typhoid Carrier—(Urinary Case. L.C.).

Admitted Ham Green Hospital, 19th January, 1909, for
observation and experiment.

University of Bristol,
April 10th, 1913.

Since the last report, the examinations of the blood and excreta have been continued regularly. It has not been necessary to institute any other form of treatment, as since the injections of the sensitized vaccines in October-February, 1911-12, the patient has not discharged any of the typhoid organisms in her urine. The blood still continues to indicate the presence of anti-bodies to typhoid bacilli, although the quantity is gradually decreasing. We propose to continue the examinations until the middle of September next; and should the present favourable course of the condition show no retrogression, we are of the opinion that it will be safe to regard her as cured.

J. WALKER HALL.

DIPHTHERIA (including Membranous Croup).

During the 52 weeks of 1912, 643 cases and 48 deaths were notified as Diphtheria, giving a death rate of 0·13.

The Diphtheria rate (including Membranous Croup) for the 95 great towns in 1912 was 0·13.

The 48 deaths returned as due to Diphtheria gave a case mortality of 7·4 per cent. The case mortality observed in 1894 was 39 per cent.; much of this difference is apparent only as large numbers of very mild cases, which in 1894 would have escaped observation, are sought for now by systematic bacteriological examination; this causes the figures as to case-mortality to be somewhat misleading. But the case-mortality of the years 1901-2-3 may more properly be compared with that for this year, and the diminution indicates, as I believe, the joint effect of decline in the virulence of the infection since these years of chief prevalence, and immunisation of the susceptible population through the wide diffusion of attenuated forms of the bacillus.

The 48 deaths from Diphtheria and Membranous Croup correspond to a death-rate from these causes of 13 per 100,000 living, which is the lowest rate recorded since 1891, with the exception of the rate of 9 in 1910, and 11 in 1911, and compares with a rate of 14 in 1909, 18 in 1908 and 1907, 22 in 1906, 16 in 1905, of 30 in 1904, of 35 in 1903, and of 54 in 1902.

The rate of attack 178, is the lowest recorded since 1900, with the exception of the rate of 145 recorded in 1910, and 163 in 1911.

REPORT ON DIPHTHERIA IN THE CITY OF BRISTOL.

(Prepared for the information of the Local Government Board. April, 1913.)

The history of Diphtheria prevalence in Bristol is not without interest ; and, as I have now an official knowledge of the conditions in the city, extending over some 27 years, I may briefly summarise it.

Up to the year 1899 this disease did not prove troublesome, and caused little anxiety to the Health Department.

Before that date the mortality was comparatively low, there was little or no tendency to School Outbreaks, and the want of Hospital accommodation for Diphtheria cases was not felt.

In 1899 a change came about which, up to and including the year 1904, caused grave anxiety. Since 1904 the prevalence and the fatality have, as shown by Table I., again subsided.

TABLE 1.

Diphtheria (including Membranous Croup) for 23 years.

	1	2	3	4	5
Years.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per cent.
1890* ²	56	25	16	7	23·5
1891	70	31	16	7	22·8
1892	106	47	38	16	35·8
1893	141	59	53	23	37·5
1894	128	56	50	22	39·0
1895	165	69	34	14	20·6
1896	258	111	38	16	14·7
1897	205	88	36	15	24·7
1898*	217	68	44	13	20·2
1899	215	67	33	10	15·3
1900	512	157	103	31	21·1
1901	908	275	124	37	13·6
1902	1,109	325	189	54	17·0
1903	1,134	331	119	35	10·4
1904†	1,051	305	105	30	9·9
1905	1,021	284	59	16	5·7
1906	839	231	82	22	9·7
1907	926	251	68	18	7·3
1908	924	243	69	18	7·4
1909	712	188	55	14	7·7
1910	556	145	38	9	6·8
1911	584	163	42	11	7·1
1912	643	178	48	13	7·4

* Enlarged City. † City again extended in 1904.

*² Notification commenced February 12th, 1890.

The meaning of the change for the worse which came about in 1899 and the following years can be thus explained.

In 1894, following the lead of the New York Public Health Authority, the Health Committee allowed me to establish a small Laboratory at the Health Offices, where, in conjunction with Dr. Walter Dowson and Dr. J. C. Heaven, we worked for eight years examining throat and nose swabs for local medical practitioners, adding, as occasion offered, facilities for Widal examination and Sputum examination. In 1902 this routine work grew too exacting, and was handed over to others; but our experience was most useful and instructive. Up to 1899 the Diphtheria organism commonly found was some short variety of the Klebs Löffler bacillus, and the clinical manifestations, though occasionally fatal, were comparatively mild, and apparently little given to the creation of Diphtheria "carriers." In consequence School outbreaks were not troublesome; and Scarlet Fever was as a rule not complicated by secondary Diphtheria.

In 1899 the conditions changed, a virulent type was introduced into the City, in the Laboratory we made the acquaintance of the long virulent bacillus (Type A, Wesbrook), and coincidently a severer and more fatal type of Diphtheria spread over the City, leading to large School outbreaks, and complicating many of our Scarlet Fever cases.

This type of bacillus was apparently introduced into the southern part of the City from the County, and for a time, until it had gradually extended, we could definitely tell in the Laboratory from which quarter of the City a particular swab came.

The following Special Reports have been issued:—

1895. Report on Bacteriological Examinations of
Diphtheria Cultures in the Public Health
Laboratory, 1895.

1903. Diphtheria in Fishponds, 1903.

Also in each Annual Report since 1895, very careful and detailed consideration has been devoted to Diphtheria in its Public Health aspect.

TABLE II.

REFERENCES TO DIPHTHERIA IN ANNUAL REPORTS.

1895.	Pages 25-27.	
1896.	„ 30-36.	
1897.	„ 35-44.	“ Nasal Diphtheria.”
1898.	„ 30-33.	
1899.	„ 19-22.	
1900.	„ 47-64.	Diphtheria in Bedminster. Diphtheria at Avonmouth.
1901.	„ 31-49.	Out-patient Treatment of Suspects. Outbreak at Eastville.
1902.	„ 39-52.	Diphtheria in St. George.
1903.	„ 35-53.	Outbreak at Chester Park School.
1904.	„ 55-66.	Diphtheria in Fishponds.*
1905.	„ 36-45.	Horfield Schools.
1906.	„ 40-49.	Bedminster Schools.
1907.	„ 45-54.	
1908.	„ 35-45.	Luckwell Lane School, Bedminster.
1909.	„ 77-85.	Barnards Place Infants' School. Shirehampton and Avonmouth Schools. Baptist Mills Schools.
1910.	„ 33-41.	
1911.	„ 38-46.	Small School outbreak at S. Albans, Christ Church, S. Gabriels, Greenbank and S. Marks Schools.

* Special Report.

TABLE III.

DIPHTHERIA.

TABLE SHOWING TOTAL CASES NOTIFIED, AND DEATHS DURING THE YEAR 1912.

CASES NOTIFIED IN WHOLE DISTRICT.										TOTAL CASES NOTIFIED IN EACH LOCALITY.								
At all Ages	At Ages—Years						Ashley	Bedminster	Bristol Central	Clifton	Knowle	S. George	S. Philip	Stapleton	Westbury-on-Trym	Public Institution	Not belonging to Borough	
	Under 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65												65 and upwards
CASES 1912	1st QUARTER 127	2	42	63	16	4	—	10	26	15	4	11	24	17	13	—	5	2
	2nd QUARTER 115	2	29	62	11	10	1	12	26	5	5	4	10	13	18	17	4	1
	3rd QUARTER 175	2	40	119	9	2	1	29	37	15	6	12	22	16	30	6	2	—
	4th QUARTER 226	2	51	151	16	6	—	17	43	13	17	28	34	25	37	3	7	2
	643	8	162	395	52	22	2	68	132	48	32	55	90	71	98	26	18	5
DEATHS 1912	1st QUARTER 16	2	9	5	—	—	—	1	2	2	—	1	6	1	1	—	1	1
	2nd QUARTER 11	—	8	2	1	—	—	1	2	1	—	2	2	1	1	1	—	—
	3rd QUARTER 11	1	—	10	—	—	—	1	3	1	1	—	—	—	5	—	—	—
	4th QUARTER 10	—	5	4	1	—	—	1	5	1	—	1	1	—	—	—	1	—
	48	3	22	21	2	—	—	4	12	5	1	4	9	2	7	1	2	1

It will be noticed in Table I that the Deaths, and the proportional Deaths per 100,000 living have diminished more steadily and satisfactorily than the cases notified.

The increase in Notified Cases following on a systematic search for contacts by throat and nasal swab-examination on an extended scale, is a well-known phenomenon in Public Health practice. This, while it apparently increases the incidence rate, also apparently lowers the case mortality.

The march of the death-returns year by year helps to correct these false assumptions, and it is seen that the death-rate per 100,000 living in the years 1910-11-12 compares favourably even with the pre-epidemic years from 1892-1899; and it can hardly be said that Diphtheria is in these years fatally prevalent in excess. Indeed, though it still requires careful watching, especially as some surrounding districts have been somewhat heavily attacked, in the City itself less trouble has been experienced than for some years past.

TABLE IV.

**Diphtheria—Showing incidence of Cases and Deaths on
the Sub-Districts of Bristol, 1912.**

Incidence Rate per 100,000 Population.	Cases.	REGISTRATION SUB-DISTRICT. POPULATION. (Estimated 1912.)	Deaths.	Death Rate per 100,000 Population.
141	68	Ashley ... 48,091	4	8
213	132	Bedminster ... 61,720	12	19
127	48	Bristol Central ... 37,582	5	13
76	32	Clifton ... 41,971	1	2
260	55	Knowle ... 21,098	4	18
152	90	S. George ... 59,100	9	15
141	71	S. Philip ... 50,103	2	4
365	98	Stapleton ... 26,780	7	26
200	26	Westbury-on-Trym ... 12,955	1	7
—	18	Arising in Municipal Institutions	2	—
—	5	Not belonging to Boro'	1	—
178	643	City ... 359,400	48	13

TABLE V.

**Diphtheria—Notifications in each Quarter in the
Sub-Districts of Bristol, 1912.**

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
Ashley	10	12	29	17	68
Bedminster	26	26	37	43	132
Bristol Central	15	5	15	13	48
Clifton	4	5	6	17	32
Knowle	11	4	12	28	55
St. George	24	10	22	34	90
St. Philip	17	13	16	25	71
Stapleton	13	18	30	37	98
Westbury-on-Trym ... ..	...	17	6	3	26
Arising in Municipal Institutions	5	4	2	7	18
Not belonging to Boro'	2	1	...	2	5
CITY	127	115	175	226	643

TABLE VI.

DIPHTHERIA.

Cases Removed to Hospital during the Year 1912.

	Ashley	Bed- minster	Bristol Central	Clifton	Knowle	St. George	St. Philip	Staple- ton.	West- bury-on- -Trym.	Public Institu- tions.	Outside City.
1st Quarter	5	14	13	...	6	12	15	12	...	5	2
2nd "	8	14	5	2	1	6	12	11	16	4	...
3rd "	20	30	11	2	10	6	13	26	5	2	...
4th "	10	35	8	8	18	22	15	27	1	7	2
Totals ...	43	93	37	12	35	46	55	76	22	18	4

Total Number of Cases Removed ... 441

TABLE VII.

**Laboratory Examinations in Diphtheria and
Enteric Fever.**

	Diphtheria.	Enteric Fever.	Total..
1895	87	—	87
1896	206	—	206
1897*	379	254	633
1898	390	127	517
1899	485	290	775
1900	915	452	1,367
1901	2,527	425	2,952
1902	3,771	420	4,191
1903	5,545	240	5,785
1904* ²	6,858	308	7,166
1905	6,469	161	6,630
1906	4,738	219	4,957
1907	6,549	166	6,715
1908	5,003	172	5,175
1909	4,118	138	4,256
1910	3,113	172	3,285
1911	3,081	373	3,454
1912	3,968	184	4,152

* City enlarged in November, 1897.

*² City enlarged in October, 1904.

In November, 1902, this work, which had for eight years been voluntarily undertaken by the Medical Officer of Health, was transferred to University College, Bristol, and in 1906 was transferred to the City Analyst.

Of the 4,152 bacteriological examinations made during 1911, 2,213 were of suspected cases of Diphtheria, of which a positive result was obtained in 458, 667 showed suspicious organisms, and 1,088 gave a negative result; 1,753 control examinations to determine recovery, of which a positive result was obtained in 601, 488 showed suspicious organisms, and 669 gave a negative result; and 184 were of suspected cases of Enteric Fever, of which a positive result was obtained in 49 and two gave doubtful reactions.

Diphtheria Antitoxin.

The Health Committee during the year have supplied 488,000 units of Diphtheria antitoxin free to Medical Practitioners upon application, for 88 patients whose parents were certified as unable to afford to pay for this.

The following revised Memorandum has been issued :—

Antitoxin in Diphtheria.

The importance of **early dosage** cannot be over-estimated, a delay of a few hours in administration of Antitoxin may make a serious difference to the patient : if every case could be treated **on the first day of illness and kept at rest for three weeks**, very favourable results would follow.

If the Clinical symptoms warrant the clear suspicion of Diphtheria, do not await the result of a Culture, but administer a full dose of Antitoxin at once.

If the diagnosis is clinically certain, notify at once (by telephone if necessary), specifying urgency if removal is required. A Culture, which should always be taken, can be dealt with later. Written Notification must also be forwarded.

DOSAGE.

The following Rules should be followed, having regard to the type of Diphtheria at present in the City.

The minimum Therapeutic dose should be taken as 4,000 units irrespective of age ; diphtheria is more severe in young children, so that large doses are necessary, and may be administered without ill effect.

In all cases showing definite evidence of Diphtheria, the doses should be :—

On first day of illness	...	...	4,000 units
„ second	„	...	6,000 „
„ third or later	...	...	8,000 „

In the more severe cases the maximum dose **should be repeated** every 12 hours until the membrane begins to separate.

In less severe cases the interval may be prolonged to 24 hours.

In mild cases seen on the first or second day, one dose may be sufficient.

The administration of a **sufficient dose** of Serum at an early date greatly reduces the risk of severe paralysis during convalescence.

D. S. DAVIES, M.D.,
Medical Officer of Health.

B. A. I. PETERS, M.B.,
Resident Medical Officer,
Ham Green Hospital

PUBLIC HEALTH OFFICES,
40 PRINCE STREET, BRISTOL.
March, 1911.

DIPHTHERIA, 1912.

INCIDENCE ON PARTICULAR SCHOOLS.

1912. There has been no special School Outbreak of Diphtheria at particular Schools with the exception of:—

Shirehampton Council School—May and June,
1912.

Eastville Infants' Council School—June to
Summer Vacation, and from September
to end of year 1912.

Reports appended.

DIPHTHERIA AT SHIREHAMPTON.

Reported by Dr. J. C. HEAVEN.

May and June, 1912.

The recent cases in this village appear to be almost entirely attributable to one family, which I will call the M family.

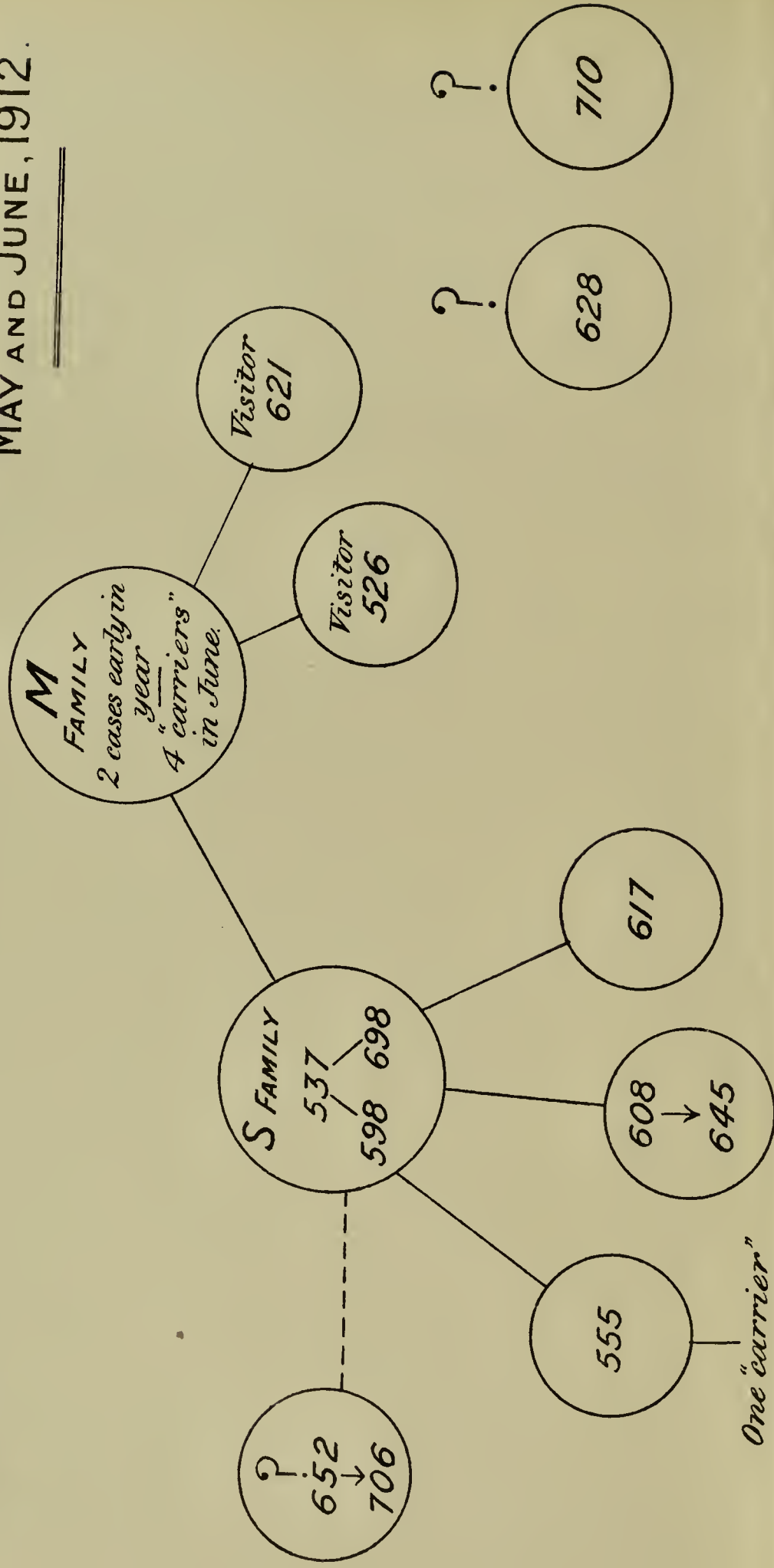
In the early part of the year two children, **D. M.** and **B. M.**, were admitted to Ham Green with Scarlet Fever. **D. M.** was found on admission to have a dirty throat with some membrane, and antitoxin was given. A culture from the throat proved negative; but one from the nose, taken later, proved positive. **B. M.** also had a dirty throat, and a culture gave a distinct positive result. Both these cases, therefore, had Diphtheria before removal; and there is little doubt that one or more "carriers" were at that time left in the family. That this was so is made practically certain by the fact that the two children were discharged from hospital after negative cultures; they were found on examination of cultures on 27th June to be still free, and therefore the hospital did not re-infect the family by discharging children still infectious; that about the end of April a visitor to the family sickened about three days after arrival, and was removed to hospital; that, again, another visitor came about 20th May, and was removed to hospital with Diphtheria on 24th May; and that when the whole family was examined on 27th June it was found to contain no less than four "carriers."

The first case (537) outside the **M** family's house was that of a constant playmate of the **M** family. This case (537) most likely gave it to his brother and sister, or they also may have got it in the **M's** house; he also probably gave it to two playmates in other families (608 and 617). 608 infected his brother (645). Again, indirectly, (537) almost certainly infected a third family (Case 555), and is possibly answerable, through school infection, for

DIPHTHERIA.

SHIREHAMPTON.

MAY AND JUNE, 1912.



Cases (652 and 706.) I have prepared a diagram showing the spread from the **M** family, which should be consulted when reading the above.

To sum the matter up:—Out of the 13 cases notified no less than 11 can be more or less clearly traced to the **M** family, whose power for spreading the disease is now checked by removal of all those showing the presence of the Diphtheria bacillus to Ham Green Hospital.

As three of the cases were scholars in one class in the Infant School, the whole class (59) was examined, and cultures taken from all those where it was deemed advisable, with the result that three were found to be "carriers": one in throat and nose, and two in nose.

DIPHTHERIA AT EASTVILLE INFANT SCHOOL.

Reported by Dr. J. C. HEAVEN.

June and July, 1912.

Up to the date of my visit (5th July) seven cases had occurred, of which six attended this school, and one was not of school age. Of the six scholars, four were in the Infant Department, one in the Boys' (an elder brother of one of the infants), and the sixth was in the Girls' School.

The first case in the school was an infant notified on 11th June—onset 9th June. From that date up to 1st July five other cases connected with the school occurred: two of these died.

On 5th July the infected houses were visited and the other children examined. In one family (**B** family) where there had been three cases, the other two children were found bacteriologically affected in both throat and nose, and enquiry showed that one of these (a boy) attending the Infant School had had a discharge from the nose with sore ala since about 10th June. This

date coincides fairly closely with the first case in the school from which he may have become infected. He attended school up to 26th June, and in addition to probably infecting three of his own brothers and sisters was very likely responsible for the other cases in the Infant Department. These two **B** children were the only infected ones found in the houses attacked.

The school was visited on the same date, and the classes in which the cases occurred were examined.

On Register these classes	...	...	...	147	
No. seen	...	...	...	74	} 147
No. absent	...	...	...	73	
No. swabbed	...	...	...	26	
Results of swabbing:—					
Positive	...	...	...	4	
Suspicious	...	...	...	14	
Negative	...	...	...	8	
				—	
				26	
				—	

Five children were also submitted from other classes by the mistress. Four of these were swabbed, but no positive result obtained.

I am of opinion that the chief if not the sole cause of the outbreak was the undiscovered nose case in the **B** family, which dates back to the time of the first notified case; he was, at all events, almost certainly responsible for four of his brothers and sisters.

Since 5th July up to date (17th July) only two further cases have occurred among scholars. Both were in the Infant School, and they may well date back to previous cases, or may be due to infection from one of those absent from the classes on 5th July. A brother of one of these was found on examination to be a nasal "carrier."

PRINCIPAL PREVENTIVE MEASURES ADOPTED SINCE 1894.

1.—Examination of throat cultures for diagnosis; examination of nose cultures for diagnosis; examination of contact throats and noses, gradually elaborated from 1895 onwards (Table VII.)

2.—During epidemic periods—for example, round 1903—special out-patient depôts established on occasion, at which contacts might be examined and treated; also “suspicious” or “Hofman” throats and noses not clinically ill might be dealt with.

3.—Since 1899. Removal to Hospital of:—

- (A) Obvious clinical cases of Diphtheria.
- (B) Cases showing bacteriologically virulent forms of Diphtheria in throat or nose, whatever the clinical condition.
- (C) Some cases showing less positive results, but needing isolation.

4.—Systematic:—

- (A) School examination when required, a special Assistant Medical Officer being engaged and paid by fee for the purpose, as there is no salaried Assistant Medical Officer of Health in the City; and the Education Committee have no Medical Officer available.
- (B) Home District Examination on occasion, when the school outbreak has seemed to be fed rather from home infection than school infection. Relatives of school children are then examined as possible “carriers”—elder brothers and sisters, father and mother, etc., an important factor in a Diphtheria campaign, hardly needed since 1904.

5.—Disinfection of Schools, premises and belongings.

6.—Issuing of warning memoranda to families. (See Appendix I).

7.—Issuing of special Memoranda to doctors to secure :

- (1) Early notification.
- (2) Early administration of Antitoxin.
- (3) Early removal (See Appendix II.).

8.—Free issue of Antitoxin to poor persons unable to afford it on receipt of certificate from Medical Attendant. (See Page 42).

9.—School exclusion system, in force since Notification 1890. Controlled by bacteriological results. Contacts excluded 7 days. (See Appendix III).

10.—Use and sufficiency of Hospital accommodation. (Table VI.)

Sufficient—fully used—Table appended.

Round the epidemic years 1900-1904 a special Relief Hospital (Clift House) was opened and used for Diphtheria. This was closed in July, 1906.

We have no beds available for cases from districts adjoining the City, especially as our total Hospital provision does not exceed 169 beds (at 2,000 cub. ft.) for a population of 359,000; and for the past six months 20 beds have been utilised for Tuberculous Phthisis (Sanatorium benefit), thus putting two whole blocks out of action for Fevers.

Co-operation has taken place with other districts as far as possible, especially when interchange of scholars has implicated boundary-line schools, and it may generally be said that relations are friendly with all the bordering Authorities, and assistance is informally and willingly given on request.

No formal joint plan of campaign has, however, been entered upon with such Authorities, and the pressure of City work in other directions would at present forbid the undertaking of outside responsibilities.

APPENDIX I.

CITY OF BRISTOL.

DIPHThERIA.
**To Parents, School Teachers, Sunday School Managers
and others.**

When Diphtheria is prevalent in a District, it is necessary to remember that it is very largely if not entirely spread by contagion from one patient to another.

Diphtheria generally attacks children, and is readily spread by intercourse at Day Schools, at Sunday Schools, at School Outings, and by home visiting. The disease is apparently not infectious through the air, like Scarlet Fever, but needs contact with infected persons or articles such as is afforded by kissing, by using infected spoons or forks, etc.

Diphtheria is well-known as a throat-disease, which is generally serious; the fungus may also grow freely in the Nose, when it frequently produces no symptoms unless it be again transferred to a Throat. It may also grow in the Ear and other places.

Nose Cases are the most dangerous, as there may be no obvious illness; but they are highly infectious, and if untreated, may persist for months. They can only be recognised by the Microscope.

Suspicious Cases are those in which the throat or nose is probably infectious, although the symptom are very slight. These may develop into more serious forms, and need careful local treatment for some time.

When Diphtheria is prevalent, parents should secure Medical advice for all sore throats or unusual nasal discharge, and the Doctor will take a swabbing for bacteriological examination.

Great care should be taken at home that each person uses a separate cup, glass, fork and spoon, and that these articles are washed in boiling water after use.

School Teachers should prohibit the communistic use of the handkerchiefs, unnecessary kissing, the improper use of slate sponges, or other habits promoting infection from mouth to mouth, and should watch for **suspicious throats or nose or ear discharges**: suspects should be sent home and reported to the Health Offices: Sunday School Outings should be carefully supervised to exclude children coming from infected houses, and every care should be taken to prevent contact, direct or indirect, between infected and healthy persons.

All drinking vessels used in common should be frequently cleansed.

There is an advantage in keeping all drains in working order and well flushed at all times, and in the avoidance of dirt, both personal and domestic, but this will not suffice to control the personal communication of diphtheria from the sick to the healthy.

D. S. DAVIES, M.D.,

Medical Officer of Health.

PUBLIC HEALTH OFFICES,
40, Prince Street, Bristol.

Telephone 4789.

PRECAUTIONS
in
Nursing Diphtheria or Membranous Croup
AT HOME.

If not moved to Hospital.

1. Keep the Patient in a separate room until free from Diphtheria.
2. Soak infected body linen and bed clothes in carbolic (half-pint to 2 gallons water) and wash at home.
3. **WASH ALL PATIENTS' SPOONS, FORKS, AND CUPS IN BOILING WATER. USE SEPARATE CUPS, FORKS, AND SPOONS FOR EACH PERSON.**
4. Use rags for handkerchiefs and burn after use.
5. Put carbolic in all chambers and spitting cups used by patient.
6. Flush all sinks, privies and drains daily.
7. **NO VISITORS ARE TO BE ALLOWED TO PATIENT; ESPECIALLY NO CHILDREN.**
8. **CHILDREN FROM SICK HOUSE MUST NOT ATTEND SCHOOL OR MIX WITH OTHER CHILDREN.**
9. On recovery, Disinfection must be carried out to the satisfaction of the Medical Officer of Health.
10. The Patient will only be re-admitted to School on the Certificate of the Medical Officer of Health.
11. Tailoring, Dressmaking, Washing, Dairywork, or Millinery are not to be carried on in infected houses, or by infected persons.
12. **TAKE NOTE OF ANY UNUSUAL NASAL DISCHARGE AMONGST OTHER CHILDREN IN THE HOUSE, AND ASK THE DOCTOR TO TAKE A CULTURE FOR EXAMINATION.**
13. Penalties

1. Failure to Notify Diphtheria by person in charge of Patients or Occupier **£2**
 2. Failure to deliver over clothing for disinfection **£10**
 3. Exposing an infected person **£5**
 4. Showing infected houses or rooms for letting **£20**
 5. Making false answers in regard to infected houses or rooms **£20**, or one month with hard labour.
 6. Ceasing to occupy infected houses or rooms without securing disinfection **£10**
 7. Making false answers in regard to such houses or rooms **£10**
 8. Casting infectious rubbish into ashpits **£5**.

NOTICE OF THE END OF THE ILLNESS IS TO BE SENT TO THE MEDICAL OFFICER OF HEALTH ON THE SUPPLIED POST CARD, THAT THE DISINFECTION REQUIRED BY LAW MAY BE CARRIED OUT. This will not be done within one month of the outset, unless bacteriological evidence of freedom from Diphtheria is obtained.

APPENDIX II.

Telegrams :—"HYGIENE, BRISTOL."

Telephone No. 4789.

Office Hours	...	9.30—5
Saturdays	...	9.30—1
Sundays	...	10.30—11.30

PUBLIC HEALTH DEPARTMENT,

40, PRINCE STREET, BRISTOL.

Special Memorandum to Medical Practitioners.

D I P H T H E R I A .







It is urgently necessary that cases of Diphtheria which are not in a position to be properly treated and nursed at home, should be at once removed to Hospital without an hour's delay, so that they may receive full doses of Antitoxin at the earliest possible stage of the disease.

The present arrangements designed to this end do not work altogether satisfactorily as the tendency has arisen even in obvious clinical cases to await bacteriological confirmation before notifying for removal, and this may cause some hours delay, to the grave peril of the patient.

Every case of Clinical Diphtheria requiring removal should be notified at once, by telephone if necessary, and precedence in removal will be given to Diphtheria cases.

The bacteriological control over Diphtheria notification should be confined to indefinite cases without obvious clinical symptoms, or to contact cases in the course of an outbreak.

D. S. DAVIES, M.D.,
Medical Officer of Health.

SCHOOLS.	NOTIFIED DISEASES.	SCHOOLS.	NOTIFIED DISEASES.
<div><div></div><div></div></div>	<div>CITY OF BRISTOL. C</div> <div>To the Headmaster or Headmistress,</div> <div>.....Schools.</div>	<div><div></div><div></div></div>	<div>CITY OF BRISTOL. D</div> <div>To the School Medical Officer (Copy of C) Bristol Education Committee.</div> <div>.....Schools</div>
Situation of House.....		School Clearance of House.	
Patient		Case.	
This patient is not to be re-admitted to school, and other children are not to attend school from the infected house, until the Clearance Form C.C. has been received.		<div></div>	
PERSONS ATTENDING YOUR SCHOOL FROM THIS HOUSE:—		Dis.	
<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div>		<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div>	
D. S. DAVIES, M.D., Medical Officer of Health. PUBLIC HEALTH OFFICE, 40, PRINCE STREET, BRISTOL. Telegrams—"HYGIENE, BRISTOL." Telephone No. 4789.		D. S. DAVIES, M.D., Medical Officer of Health. Note.—If the Case has been removed to Hospital, the Hospital Discharge Card will be forwarded on recovery, constituting Clearance to the Patient. In the case of Dangerous Infectious Diseases not notified, such as Measles, Chickenpox or Whooping Cough, the Head Teacher must at once report each case as it occurs to The Medical Officer of Health, 40, Prince Street, Bristol. Telegrams—"HYGIENE, BRISTOL." Telephone No. 4789.	

Cholera—Choleraic Diarrhœa—Plague.

No suspicious cases were introduced.

Diarrhœa—Infantile Diarrhœa.

The number of deaths returned as due to Diarrhœal diseases during the year was 66 compared with 407, 76, 116, 154, 133, 213, 169, 206, 107, and 165 fatal cases recorded in the previous ten years. These deaths give a Diarrhœa death-rate of 0·18 per 1,000 living compared with 1·13 in 1911 and 0·19 in 1910.

The remarkable increase in deaths from Diarrhœa in 1911 was a result of the abnormal heat of the summer and autumn in that year.

CITY OF BRISTOL.

**Table showing Deaths from Diarrhœa during the
Third Quarters of the Years 1907-1912.**

Registration Sub-District.	1907	1908	1909	1910	1911	1912
Ashley ...	2	5	2	1	23	—
Bedminster ...	13	25	17	11	55	4
Bristol Central	5	13	9	2	30	3
Clifton ...	1	1	2	5	22	3
Knowle ...	2	4	1	—	15	2
St. George ...	6	32	15	10	75	4
St. Philip ...	12	29	27	5	84	6
Stapleton ...	1	6	2	2	24	—
Westbury-on- Trym	—	—	1	—	9	—

CITY OF BRISTOL.

Table showing Diarrhoeal Mortality by Weeks during the 3rd Quarters of the Years 1907-1912.
WEEKS OF YEAR.

Mean Temperature. 3rd Quarter	YEAR.	July.				August.					September.				3rd Quarter.	Rate per 1000 Population.
		27th	28th	29th	30th	31st	32nd	33rd	34th	35th	36th	37th	38th	39th		
59.9	1907	2	—	2	1	1	—	1	2	7	1	6	6	13	42	0.45
60.6	1908	2	1	—	—	1	5	12	24	20	25	14	6	7	117	0.80
59.6	1909	1	2	1	3	1	5	7	7	12	16	9	3	9	76	0.80
59.0	1910	1	—	—	2	—	1	3	2	4	6	6	5	6	36	0.37
69.4	1911	—	2	—	5	15	20	51	63	60	49	36	26	13	340	3.80
58.2	1912	1	3	2	1	3	4	1	2	2	2	2	4	—	27	0.30

Erysipelas.

During the year 1912, 253 cases of Erysipelas were notified, and eleven deaths were returned, compared with 309 cases and nine deaths in 1911.

Puerperal Fever.

Thirty-three cases of Puerperal Fever were notified, compared with 26 last year. Fifteen cases proved fatal, compared with 23 in 1900, 17 in 1901, 17 in 1902, 14 in 1903, 16 in 1904, 6 in 1905, 14 in 1906, 11 in 1907, 7 in 1908, 17 in 1909, 14 in 1910, and 10 in 1911.

Typhus Fever.

No case of Typhus Fever was notified in the City during the year. This disease disappeared when Registration of Common Lodging Houses and control of gross insanitary conditions were taken in hand in the sixties and seventies of last century. The demonstration that this disease may be inoculated by the body-louse is suggestive in this connection.

Measles.

The deaths from Measles in the City in 1912 numbered 153, compared with 164 in 1911, 32 in 1910, 90 in 1909, 96 in 1908, 36 in 1907, 140 in 1906, 180 in 1905, 94 in 1904, 11 in 1903, 411 in 1902, 7 in 1901, with 200 in 1900, and 38 in 1899. These fluctuations are characteristic of Measles prevalence in large centres of population.

Of the 153 deaths, 143 occurred in children under 5, 9 between the ages of 5 and 15, and 1 between 15 and 25.

In the first quarter of the year 50 deaths occurred, 83 in the second, 10 in the third, and 10 in the fourth quarter.

The relative fatality for a period of ten years in the City of Bristol from various diseases is here shown, and Measles is found to occupy a most prominent place amongst the causes of mortality.

			1903-1912 Deaths
Diarrhœa	...	...	1649
Measles	...	...	996
Whooping Cough...	..	..	896
Diphtheria	...	...	686
Scarlet Fever	...	...	239
Enteric Fever	...	...	150
Small Pox	...	...	16
Typhus Fever	...	...	0

RECURRENT MEASLES.

Dr. Gawn has kindly called my attention to a remarkable series of 16 cases of Measles, in each instance followed after an interval averaging 16 or 17 days, by a second attack.

The following case is, *mutatis mutandis*, typical of the series. All were followed by recovery :—

“ Winifred C., age 3, was taken ill on April 21, she
 “ had all the catarrhal signs of the invasion stage of
 “ Measles, and the eruption first became visible on the
 “ face on April 24, this spread over the body and had
 “ the appearance of the rash seen in Measles. The
 “ temperature reached 104° F., and some broncho-
 “ pneumonia developed. The condition of the lungs was
 “ improving and the temperature was nearly normal
 “ when, on May 6, it rose to 102°, the eyes and nose were
 “ running, and on May 9 the rash came out ; this was
 “ similar to the first rash, it faded in a few days, and the
 “ child soon recovered.”

"All the cases occurred in young children, only three being above six years old. None had had a previous attack of Measles. Several of the children were examined for Kopeik's spots, but there was no definite evidence of this found. None of the second attacks were fatal; but there were several fatal cases of Measles in the same district. Of the 16 cases, 8 lived in two adjoining streets, and 5 more lived in a neighbouring district. In one house 2 children were taken ill about the same time, but only 1 had a second attack.

"In another house there were 2 children, the elder one was taken ill, and ten days after the younger; as this one was recovering, the elder had a second attack, and ten days later the younger one also had a second attack."

During the time these cases were occurring, Dr. Gawn attended 106 cases of Measles. "These were in four separate districts: In the first district, 8 out of 54 had a second attack; in the second, 5 out of 30; in the third, 1 out of 4; in the fourth, 2 out of 18.

"The interval between the attacks varied from 12 to 20 days. This did not appear to be influenced by the complications, as in two cases the second attack developed while broncho-pneumonia was present.

"Both the primary and secondary attacks were of ordinary severity, except the primary attack in two cases."

DR. GAWN'S CASES OF RECURRENT MEASLES.

			A	B	C	D	E
			Onset of Initial Illness.	Rash.	Interval from A to D in days.	Onset of Recur- rence.	Rash.
1. Reginald H.	...	Male	...	Mar. 12	...	Mar. 24	...
2. Lily C.	...	Female	6 yrs.	...	12	...	Mar. 26
3. Crissie H.	...	Female	3 yrs.	Mar. 17	...	Apl. 8	Apl. 10
4. Ellen C.	...	Female	7 yrs.	Mar. 25	...	Apl. 6	Apl. 9
5. Jenny T.	...	Female	1 yr.	...	12	Apl. 15	Apl. 19
6. Emily W.	...	Female	5 yrs.	Mar. 27	...	Apl. 28	Apl. 30
7. Violet C.	...	Female	3 yrs.	...	27	Apl. 23	Apl. 25
8. William W.	...	Female	5 yrs.	Apl. 1	...	Apl. 16	Apl. 18
9. John C.	...	Male	22 mos.	Apl. 2 or 3	...	Apl. 28	Apl. 30
10. Winifred C.	...	Male	14 mos.	...	13	...	...
11. Arthur M.	...	Female	3 yrs.	Apl. 11	...	May 1	May 3
12. Edward D.	...	Male	2 yrs.	Apl. 15	...	May 6	May 9
13. Chas. H.	...	Male	18 mos.	...	15	May 15	May 18
14. Emily S.	...	Male	6 yrs.	...	17	May 25	May 27
15. Evelyn H.	...	Female	3 yrs.	...	19	May 26	May 30
16. Fred H.	...	Female	1 yr.	...	14	...	...
	...	Male	4 yrs.	May 12	...	June 1	June 3
	...	Male	...	May 15	...	June 1	June 3
	...	Male	...	May 18	...	May 28	May 31
	...	Male	...	May 16	...	...	...

Whooping Cough.

The deaths from Whooping Cough in the City numbered 69, compared with 142 in 1911, 66 in 1910, 56 in 1909, 128 in 1908, 35 in 1907, 102 in 1906, 123 in 1905, 110 in 1904, 65 in 1903, 105 in 1902, 189 in 1901, and 54 in 1900.

Twenty-six of the deaths occurred in children under one, 38 at the ages of one to five, and 5 at ages five to fifteen.

In the first quarter of the year 13 deaths occurred, 25 in the second, 14 in the third, and 17 in the last quarter of the year.

The mortality of this disease is largely due, as in the case of Measles, to the want of care exercised during the course of the illness in avoiding exposure to inclement weather. It bears a similar relation to school attendance as in the case of Measles, and is very fatal at ages under five.

Influenza.

This disease was credited with 49 deaths during 1912, compared with 27 in 1911, 43 in 1910, 27 in 1909, 73 in 1908, 55 in 1907, 47 in 1906, 54 in 1905, 27 in 1904, 33 in 1903, 56 in 1902, 65 in 1901, and 53 in 1900.

Thirty-two deaths occurred in the first, 9 in the second, 3 in the third, and 5 in the fourth quarter of the year.

Cerebro-Spinal Fever and Anterior Polio-Myelitis.

These diseases are now compulsorily notifiable under an Order of the Local Government Board, dated 15th August, 1912. Notification had previously been adopted by the Bristol City Council; first, for six months only, in October, 1911; and, secondly, in March, 1912, as a permanent measure. The Order of 1912 supercedes the local option.

During the year three deaths were returned as due to Cerebro-Spinal Fever: 2 in Bedminster, and 1 in a Municipal Institution.

Six notifications of Cerebro-Spinal Fever, and 7 of Anterior Polio-Myelitis were received during the year.

TUBERCULOSIS.

Phthisis (Pulmonary Consumption).

The fatality of Pulmonary Phthisis and of other Tubercular diseases, in comparison with that from the seven principal Zymotic diseases is shown here for 15 years :—

Year.	Phthisis.	Other Tubercular Diseases.	Seven Principal Zymotics.
1898	393	178	851
1899	430	180	582
1900	415	145	606
1901	401	139	530
1902	415	162	942
1903	366	154	375
1904	413	144	578
1905	407	152	583
1906	404	137	585
1907	384	114	314
1908	397	140	467
1909	391	133	350
1910	354	129	233
1911	410	124	789
1912	402	102	358

Phthisis is thus shown to be a serious cause of mortality, leading in some years to as many deaths as the seven principal Zymotic (or chief epidemic) diseases; but the rates in the next table show that the death-rate from this disease has steadily declined since 1840

City of Bristol—PHTHISIS.

Year.	Population.	Total Deaths.	Rate per 100,000 Population.
Combined Districts :— Bedminster, Bristol, Clifton.	1838	590	422
	1839	643	459
	1840	665	475
	1841	597	358
	1842	550	330
	1843	634	381
	1844	553	332
	1845	560	336
	1846	582	349
	1847	510	306
	1848	560	336
	1849	536	322
	1850	488	303
	1851	478	262
	1852	506	278
	1853	587	322
	1854	479	263
	1855	498	273
	1856	490	269
	1857	527	289
	1858	523	287
	1859	550	302
	1860	481	238
	1861	524	259
	1862	488	241
	1863	477	236
	1864	523	258
	1865	512	253
	1866	564	279
	1867	535	264
	1868	498	246
	1869	527	260
	1870	583	238
	1871	579	236
	1872	567	231
	1873	535	218
	1874	524	214
	1875	528	215
	1876	401	205
	1877	410	207
	1878	435	217
	1879	404	199
	1880	367	179
	1881	341	164
	1882	405	194
	1883	426	203
	1884	410	194
	1885	413	194
	1886	477	185
	1887	332	153
	1888	333	153

PHTHISIS continued.

Year.	Population.	Total Deaths.	Rate per 100,000 Population.
1889	218,848	326	148
1890	220,442	413	187
1891	222,049	382	172
1892	223,592	372	166
1893	225,028	363	161
1894	226,578	332	146
1895	228,139	317	138
1896	230,626	320	138
1897	232,242	302	130
1898	316,900	393	124
1899	320,911	430	134
1900	324,973	415	127
1901	329,086	401	121
1902	334,632	415	124
1903	338,895	366	108
1904	343,204	413	120
1905	358,505	407	113
1906	363,223	404	111
1907	367,979	384	104
1908	372,785	397	106
1909	377,642	391	103
1910	382,550	354	92
1911	357,509	410	114
1912	559,400	402	111

PHTHISIS

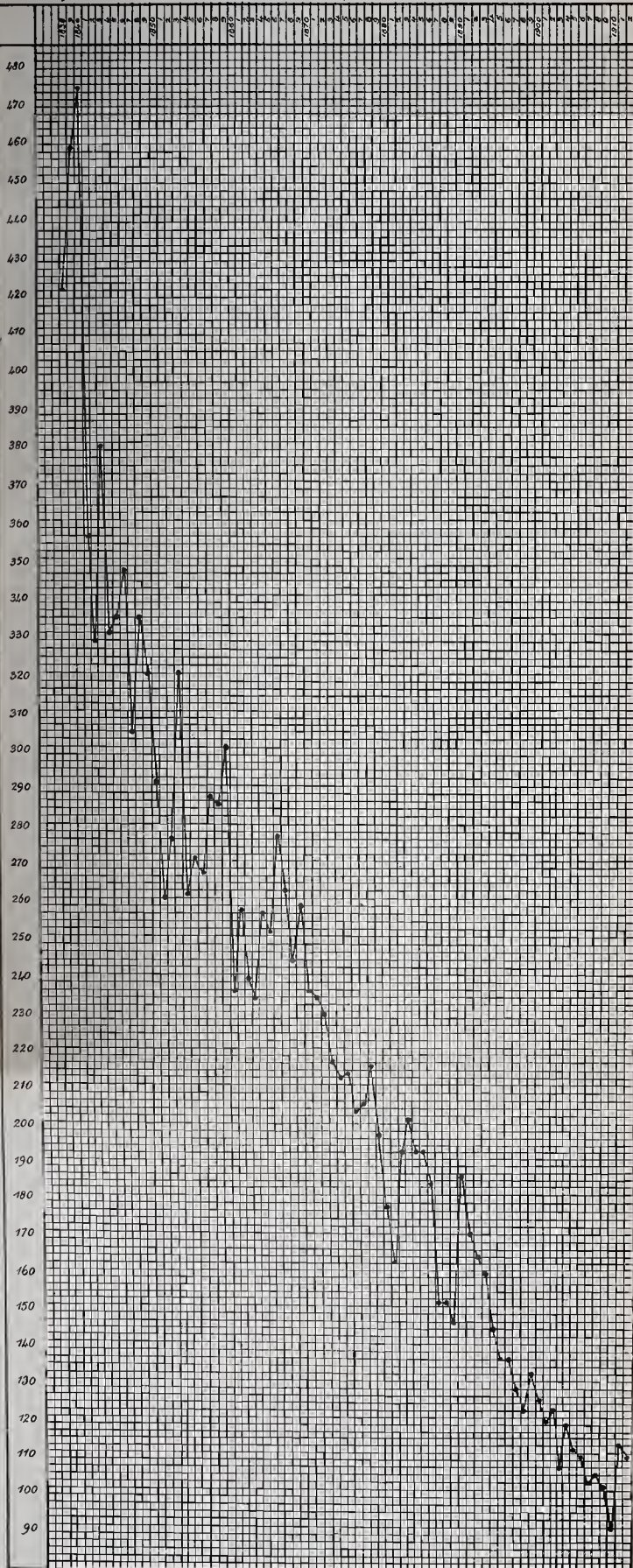
CITY OF BRISTOL

DEATH RATES PER 100,000 POPULATION.

COMBINED DISTRICTS:

BEAMINSTER.
BRISTOL.
CLIFTON.

CITY OF BRISTOL.



TUBERCULOSIS.

Phthisis (Pulmonary Consumption).

The summary of "Municipal Action taken for the Control of Tuberculosis," which follows, shows that since 1891 Bristol has not been negligent of recurrent opportunities for mitigating the hardships caused by Tuberculosis. This work, which is pre-eminently the work of a Health Committee, has now received the sanction of the National Insurance Act, under which greater facilities are offered to Local Authorities for continuing the good work of relief which many had already begun. The Report of the Astor Committee accepted the measures generally recognised as advisable, centring round Notification, the Tuberculosis Dispensary, the Sanatorium for early cases, and the Hospital.

There can be little doubt that the detection of early cases and the application of suitable treatment, together with other precautions, may prolong many lives and limit some opportunities of infection: thus advantaging the present generation. There does not seem, however, to be sufficient evidence to support the belief that the result of all possible measures will approach the extinction of Phthisis; if, indeed, such measures will affect its endemic constitution favourably at all. This is too wide a question to be discussed here; but it always seems to be essentially sane to avoid the bitterness of disappointment by recognising the limitations set by circumstance and natural selection upon our endeavours.

Municipal Action in Bristol for the Control of Tuberculosis.

A. PAMPHLET ADVICE.

1891. Instructions, based on New York Regulations first issued.

1892-93-94. Reprinted.

1899. Re-issued.

1904. Revised pamphlet issued. 80,000 copies distributed.

B. SPUTUM FLASKS.

1904. Supplied by S. John's Ambulance Brigade.

1906. Supplied by Health Committee.

Total number supplied to end of 1912—340.

4,710 bottles of Disinfectant Solution also supplied for use therewith.

Year.	No. of Flasks provided.	Bottles of Disinfectant Solution.
1904	—	13
1905	—	79
1906	21	562
1907	46	375
1908	35	499
1909	29	687
1910	46	720
1911	69	834
1912	94	941

C. REGULATIONS AGAINST SPITTING.

1903. Bye-Law adopted by City Council against spitting.

“A person shall not spit on the floor, side or wall
“of any Public Carriage, or of any Public Hall,
“Public Waiting-room, or Place of Public Enter-
“tainment, whether admission thereto is obtained
“upon payment or not. Any person offending
“against this Bye-Law shall be liable to a fine not
“exceeding £1.”

D. VOLUNTARY NOTIFICATION.

1905. Voluntary Notification of Phthisis adopted by City Council.

Compulsory Notification became Law { 1908. Poor Law.
1911. Hospitals.
1913. General—superseding Voluntary Notification.

TABLE SHOWING NOTIFICATION RETURNS.

Year.	Voluntary	Poor Law (Compulsory).	After Notified Cases	Total
1905	330			330
1906	703			703
1907	542			542
1908	516			516
1909	395	173		568
1910	361	174		535
1911	327	196	456	979
1912	General Order 579	177	667	1523

Enquiries are made by the District Inspectors into all cases unless specially exempted, and disinfection of premises or articles is secured wherever possible with consent.

Note the enormous increase of work during the past year.

E. DISINFECTION CARRIED OUT IN HOUSES IN PHTHISIS CASES.

1901. Offered after fatal cases.

1905. First undertaken.

Total rooms disinfected to } After fatal cases, 1,832.
end of 1912. } After Notified cases, 1,780

Total articles of bedding } After fatal cases, 1210.
ditto } After Notified cases, 956.

Year	ROOMS		BEDDING, ETC.	
	After Notified Cases	After Fatal Cases	After Notified Cases	After Fatal Cases
1905	49	218	36	134
1906	293	250	137	162
1907	195	214	90	110
1908	211	210	119	136
1909	224	228	132	148
1910	222	200	18	124
1911	303	218	201	159
1912	283	294	113	237
Totals	1780	1832	956	1210

F. NOTIFICATION OF PHTHISICAL CHILDREN ATTENDING SCHOOL.

Number attending Schools, 1912—59, 848.

Total notified from 1905 to end of 1912—349 (145 males and 204 females).

Year	Male	Female	Total
1905		15	15
1906	17	27	44
1907	11	23	34
1908	10	10	20
1909	8	6	14
1910	11	10	21
1911	23	41	64
1912	65	72	137

G. SANATORIUM PROVISION FOR EARLY CASES.

The Corporation first acquired and maintained 20 beds in Winsley Sanatorium in 1905. In 1912 they acquired another bed, making 21 beds in all.

The total number of cases admitted to Winsley Sanatorium up to the end of 1912 was 574, out of 1,298 applications for admission.

In 1912 two blocks were set aside for cases of Phthisis at Ham Green, and 20 females were admitted.

(See "Sanatorium Benefit" scheme later.)

H. AFTER HISTORY.

Up to the end of 1911 it was found that of 468 patients discharged from the Bristol Maintained beds at Winsley Sanatorium.

194 died.
 161 could not be traced.
 114 were alive, of whom—
 94 maintained working capacity
 20 were not able to work.

This gives a total of 294 candidates in seven years, or an annual figure of 42, who were in need of after treatment upon a Farm Colony or similar institution, or who at any rate needed some further continuous supervision.

In addition to these 42, about 100 applicants have been rejected yearly for want of accommodation.

I. ADVANCED CASES.

No provision made by City Council (see Sanatorium Scheme.)

No Consumption Hospital in Bristol.

It is estimated that 150 Hospital beds could be usefully employed.

The Guardians have limited accommodation for advanced pauper cases, as below :

Southmead—44	...	30 Male
		14 Female
Stapleton —53	...	41 Male
		12 Female
		—
Total	...	97 beds

J. PATHOLOGICAL DIAGNOSIS.

1904. Sputum first examined for tubercle bacillus free for Medical Practitioners (City cases only).

Total examined to end of 1912 ... 4966

Total positive results ... 1414

Year	Examination of Sputum.	Positive Results.
1904	3	
1905	167	79
1906	621	196
1907	592	169
1908	616	174
1909	692	205
1910	716	209
1911	738	180
1912	821	202

K. CONTROL OF MILK SUPPLIES.

1890. Inspector of Dairies, Cowsheds and Milkshops first appointed.

Dairy Regulations in force.

1905. Bristol Corporation Act provides penalties for selling Tuberculous Milk in the City, for neglecting to segregate a Tuberculous Cow, or failing to send notice to M.O.H.; gives power to M.O.H. to take samples within the City, also outside the City if fortified with Justice's Order; and to inspect Cows with Veterinary

Surgeon for Tuberculosis of the Udder, also powers for dealing with dairies within or without the City suspected of causing Tuberculosis in City.

1899.—Milk from all farms specially examined for Tuberculosis; four out of 74 samples gave positive results.

1911.—Re-examination; 52 samples taken, all of which gave negative results.

1912.—Re-examination; 26 samples taken, all of which gave negative results.

All Milk Contracts for the City Hospitals are framed on lines protective against Tuberculosis.

L. PROTECTION OF MEAT SUPPLIES.

City.—Two Meat Inspectors deal with 98 Private Slaughter Houses in Bristol (17,460 acres). In all meat contracts for the City Hospitals the meat is to be guaranteed free from Tuberculosis or other disease.

Port.—Examination of all cargoes of imported food-stuffs is now in force under the Public Health (Regulations as to Food) Act, 1907, and a specially qualified Inspector has been added to the Port Staff for this purpose. He is also assisted in the Avonmouth District by the District Inspector, who holds the Meat Certificate of the Royal Sanitary Institute, and by the two City Inspectors of Meat, etc., one of whom also holds the Certificate.

M. HOUSING CONDITIONS—OVERCROWDING.

The Local Regulations in force provide as follows :—

BYE-LAWS :	Cubic feet
Common Lodging Houses—	
Sleeping Rooms (two children under 10 equal 1 lodger) 	300
Houses let in Lodgings—	
Room used exclusively as sleeping room	300
Room not used exclusively as ,,	400
Workshops (Factory and Workshop Act, 1901) and subsequent Orders of Secretary of State, for each person employed ...	250
Ditto, during overtime or used for sleeping	400
Underground Bakehouses—overtime ...	500

In 1897 two Inspectors gave special attention to Workshops—one is now transferred to a District. Lodging Houses and Bakehouses are supervised by a special Inspector; Tenement Houses are supervised by a special Inspector—appointed in 1910.

The Housing Town Planning, &c., Act, 1909, requires further and more regular and complete inspection and control over housing of the poor, and Regulations have already been issued for ensuring the systematic exercise of such control. The following table shows the action taken under this Act up to the end of 1912.

Total number of houses inspected, 453.

453	{	Found defective, 408.
		No action necessary, 45.
408	{	Closed under Order, 27.
		Closed voluntarily, 36.
		Made habitable, 315.
		In hand, 30.

N. ANTI-TUBERCULOSIS DISPENSARY.

In 1911 an offer was made to the Bristol Civic League of a sum sufficient to start a Tuberculosis Dispensary, and work was commenced in February, 1912, at 4, Redcliffe Parade West, with a staff consisting of a Resident Medical Officer and a Visiting Nurse.

885 patients attended at the Dispensary from February 18th, 1912, to the end of 1912. Of these, 463 were Contacts, and 422 New cases, viz.:—

Contacts.

Definite Consumption	...	130
Suspected ...	...	46
Other forms of Tuberculosis	...	133
Not Tuberculosis	...	154
		<hr/> 463

New Cases.

Definite Consumption	...	389
Stigmata	...	15
Doubtful cases	...	8
Not Tuberculous	...	10
		<hr/> 422

Total attendances	...	6,568.
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Two patients were sent to the Bristol General Hospital, 3 to the Bristol Royal Infirmary, 6 to Ham Green Sanatorium, 9 to Winsley Sanatorium, 6 to other Sanatoria, and 8 to Southmead Workhouse.

49 cases died.

139 cases were given Tuberculin.

Artificial Pneumothorax was successfully induced in six cases.

175 patients were re-examined: in 9 cases the disease was arrested, 10 found to be healthy, 58 stationary, 47 showed considerable improvement, and 24 slight improvement.

CITY AND COUNTY OF BRISTOL.

National Insurance Act.

PERMANENT TUBERCULOSIS SCHEME.

A. TUBERCULOSIS DISPENSARY.

The Sub-Committee recommend :—

1. That two Dispensaries are necessary for Bristol.
2. That one Dispensary be established at 19, Port- and Square to be called “The Bristol Municipal Tuberculous (Central) Dispensary for the Prevention of Consumption; to provide separate waiting rooms for male and female patients, Consulting Room for the Medical Officer, Laboratory and Dispensing Rooms.
3. That the second Dispensary be a Branch Dispensary, and shall be the Bristol Dispensary for the Prevention of Consumption, at 4, Redcliffe Parade West, now taken over by the Health Committee. This Dispensary to be called “The Bristol Municipal Tuberculosis (Redcliffe Branch) Dispensary.”
4. The staffing of the Dispensaries to be arranged as detailed below (Paragraph 7).
5. SANATORIUM FOR EARLY CASES.—After further consideration of the question, and after having the advantage of consulting the Local Government Board, your Sub-Committee advise :—

That, in addition to the 21 beds at present at the disposal of the City at Winsley, a further 29 beds be acquired, if possible, making a total of fifty beds available for City purposes at Winsley

6. SANATORIUM FOR ALL CLASSES OF SUITABLE CASES AND AFTER-CARE CASES (60 beds).

Your Committee suggest that provision to the extent of 60 beds be provided at Ham Green in three blocks of 20 beds in each. Twenty of these beds will be for advanced cases.

7. SCHEME FOR STAFFING AND CONTROL OF THE DISPENSARIES, SANATORIA AND HOSPITALS.

TUBERCULOSIS AND OTHER OFFICERS.

The Sub-Committee consider that three Medical Officers will be necessary to manage a complete Dispensary, Sanatorium and Hospital Scheme, viz.:—

- A. Tuberculosis Officer.
- B. Resident Medical Officer at Ham Green.
- C. Assistant Medical Officer.

(A). A Tuberculosis Officer to be appointed to assume general clinical control of the Central and Branch Dispensaries and all Tuberculosis work in the City. Salary £400, rising by annual increments of £50 to £500.

The Tuberculosis Officer will be a whole-time officer, attached to the Health Department under the general administrative control of the Medical Officer of Health. He will act as expert adviser to the City Insurance Committee in regard to cases of Tuberculosis amongst Insured persons.

(B) A Resident Medical Officer at Ham Green who will take charge of the Hospital and Sanatorium beds (Fever and Phthisis) under the general administrative control of the Medical Officer of Health acting as General Medical Superintendent. He will be a whole-time Officer attached to the Health Department. Salary £300, rising by annual increments of £50 to £400 with board, rooms and attendance, less any sum received for treating Insured persons on the staff.

(C) The Assistant Medical Officer will live at Ham Green, and will assist in the Hospital and Sanatorium work, and the work of the Dispensaries, or such other work of the Health Department as may be required.

The Officer will be a whole-time Officer attached to the Health Department. Salary £200, rising to £250, with board, rooms and attendance.

Notification, 1912.

TABLE I.—CASES.

177 cases were notified under the Public Health (Tuberculosis) Regulations, 1908.

667 cases were notified under the Public Health (Tuberculosis in Hospitals) Regulations, 1911.

579 cases were notified under the Public Health (Tuberculosis) Regulations, 1911.

1423 Total number notified.

Three hundred and thirty cases were previously notified under one or other of the various Regulations.

The actual number of new cases notified during the year was therefore 1093, and these are dealt with in the following tables :—

In 738 cases, disease was reported as Phthisis of Lungs
 " 185 " " " limited to Right Lung
 " 170 " " " limited to Left Lung

TABLE II.—CASES

History Table showing Relatives affected.

History of Phthisis in Family among the cases notified in 1912.

	Father	Mother	Husband	Wife	Brother	Sister	Son	Daughter	Uncle	Aunt	G. Father	G. Mother	Cousins
Male Cases	33	32		13	46	46	9	7	3	4	4	1	1
Female Cases	42	48	36		53	56	16	18	8	6	5	4	2

TABLE III.—CASES.

Occupation of Notified Cases.

Occupation.	Male	Female	Total
Agents, Canvassers, etc.	9	—	9
Barbers	2	—	2
Boots, Shoes and Leather	29	2	31
Butchers, etc.	8	—	8
Clerks	31	3	34
Colliers	8	—	8
Cocoa	5	15	20
Clothing, Tailoring and Cotton	17	45	62
Domestic Servants	1	44	45
Drivers	8	—	8
Drugs, Chemicals, etc.	2	1	3
Florist	1	—	1
Glass Workers	3	—	3
Hawkers	6	—	6
Holy Orders	1	—	1
Home	—	17	17
Housewives	—	178	178
Ironworkers	14	—	14
Institutions	4	10	14
Joiners, Carpenters, Cabinet Makers	13	—	13
Labourers	70	—	70
Masons	4	—	4
Musicians	2	1	3
No Occupation	36	34	70
Nurses	1	1	2
Painters	18	—	18
Paper, Printing, Stationery	11	22	33
Photography	1	—	1
Police	2	—	2
Post Office	1	—	1
Potters	3	—	3
Publicans, Barmen, &c.	7	2	9
Reserves—Army and Navy	7	—	7
Railway	9	—	9
Sea	8	—	8
School	64	80	144
Shop Assistants	8	4	12
Teachers	1	3	4
Tobacco	6	21	27
Trams	4	—	4
Waiters	3	1	4
Warehouse	11	—	11
	439	484	923
Outside City cases	—	—	41
Institution, etc. cases	—	—	77
Particulars not obtainable	—	—	52
TOTAL	—	—	1093

TABLE IV.—CASES.

Table showing number of Persons in affected House.

Persons in House	-	1	2	3	4	5	6	7	8	9	10	11 & over	
Cases	-	2	30	75	142	145	203	135	87	42	33	29	— 923
												Institutions, etc.	- - 77
												Outside City	- - 41
												Particulars not obtainable	52
													<u>1093</u>

Families in House.

Families in House	-	-	1	2	3	4	5 & over	
Cases	-	-	-	623	242	40	12	6 — 923
							Institutions, etc.	- - 77
							Outside City	- - 41
							Particulars not obtainable	52
								<u>1093</u>

Rooms in House.

Rooms in House	-	1	2	3	4	5	6	7	8	9 & over	
Cases	-	-	—	12	37	83	82	537	76	68	28 — 923
										Institutions, etc.	- - 77
										Outside City	- - 41
										Particulars not obtainable	52
											<u>1093</u>

Condition of House as to "Cleanliness," "Dampness, Ventilation and Repair," and "Drainage."

		Re- port'd Good	Re- port'd Fair	Re- port'd Bad	In- stitu- tions	Out- side City Cases	Parti- culars not obtain- able	Totals
Cleanliness	- -	302	604	17	77	41	52	1093
Dampness, Ventilation and Repair	-	318	593	12	77	41	52	1093
Drainage	- -	356	562	5	77	41	52	1093

23 Notices were issued.

Houses classed as "good" or "fair," may be deemed satisfactory ; no action was required in either group.

TABLE V.—CASES.

COMMON AND INSTITUTION LODGING HOUSE CASES.

Notified in Common Lodging Houses	..	18 cases
Notified in Institution Lodging Houses	..	6 „
Total number notified	..	24 „

MILK.

701 Cases—Name of milkman reported
161 „ Obtained from casual sellers
61 „ Used condensed milk
283 „ Milk was boiled before use

DISINFECTION. ETC.

113 Cases—Bedding, etc., was disinfected
283 „ Rooms were disinfected

SPUTUM FLASKS, ETC.

94 Sputum Flasks were supplied
941 bottles of Disinfectant Solution were supplied

SCHOOLS.

137 cases attended the Elementary Day Schools

TABLE VI.—DEATHS.

ENQUIRY INTO 402 DEATHS RETURNED FROM PHTHISIS.

287 cases died at home
52 „ „ Stapleton Workhouse
8 „ „ Eastville Workhouse
14 „ „ Southmead Workhouse
22 „ „ Asylum
19 „ „ other Institutions
402

YEAR OF NOTIFICATION OF 392 FATAL CASES:—

1 death occurred amongst cases notified in 1905
5 deaths „ „ „ „ 1906
10 „ „ „ „ 1907
5 „ „ „ „ 1908
9 „ „ „ „ 1909
18 „ „ „ „ 1910
83 „ „ „ „ 1911
271 „ „ „ „ 1912
402

ONSET OF FATAL CASES.

Period of Time from Date of Onset to Death.
YEARS.

Period	-	-	Under 6 m'ths	1	2	3	4	5	6	7	8	9	10 & over	?
Cases	-	-	49	72	38	15	6	3	9	7	2	3	9	189 = 40

TABLE VII.—DEATHS.

SHOWING OCCUPATIONS OF 402 FATAL CASES.

	Male	Female	Total
Butchers	3	—	3
Boots, Shoes, Leather Workers	15	2	17
Canvassers, Agents	6	—	6
Coal	2	—	2
Cocoa	1	5	6
Clerks	10	—	10
Clothing	8	16	24
Drivers of Horses	5	—	5
Domestic Servants	—	6	6
Gardener	1	—	1
Hawker	1	—	1
Housewives	—	60	60
Home	—	26	26
Ironworkers, Engineers	4	—	4
Joiners, Carpenters, Woodworkers, etc.	7	—	7
Labourers	45	—	45
Navy and Army Reservists	5	—	5
No Occupation	16	10	26
Painters, Decorators, French Polishers	7	—	7
Paper, Printing Stationery	5	7	12
Publicans, Barmen, &c.	2	—	2
Railway Men	4	—	4
Seamen	2	—	2
School	2	7	9
Shop Assistants	6	8	14
Tobacco	—	5	5
Teachers	1	2	3
Waiters	1	1	2
Warehousemen	7	—	7
	166	155	321
Institutions, &c.			38
Particulars not obtainable			43
			402

DISINFECTION, ETC.

237 cases—Bedding, etc., Disinfected
 294 „ Rooms were Sprayed

TABLE VIII.—DEATHS.

Housing—Particulars of 402 Fatal Cases.

Persons in affected House.

Persons in House	-	-	-	1	2	3	4	5	6	7	8	9	10	11 etc.	
Cases	-	-	-	-	2	22	40	56	59	52	36	19	14	10	11 = 321
Institutions, etc.															38
Particulars not obtainable															43
															<u>402</u>

Families in House.

Families in House -	1	2	3	4	5, etc.
Cases - -	214	88	12	3	4 = 321
Institutions, etc.					38
Particulars not obtainable					43
					<u>402</u>

Condition of House as to "Cleanliness," "Dampness, Ventilation and Repair," and "Drainage."

	Reported Good	Reported Fairly Good	Reported Bad	Total
Cleanliness - - -	81	238	2	321
Dampness, Ventilation, & Repair	85	232	4	321
Drainage - - -	102	218	1	321
Institutions, etc.				38
Particulars not obtainable				43
				<u>402</u>

TABLE IX.—DEATHS.

MILK.

257 Cases—	Name of milkman reported
44 "	Obtained from casual sellers
20 "	Used condensed milk
106 "	Milk was boiled before use

DISINFECTION.

237 Cases—	Bedding, etc., was disinfected
294 "	Rooms were sprayed

Winsley Sanatorium.

City Maintained Beds, 1912.

During the year 47 Males and 74 Females made application.

The ages of these 121 applicants were 5 under 15 ; 49 at ages 15 to 25 ; 67 at ages 25 to 65.

Admitted to the Sanatorium 44 Males, 37 Females. Total 81 (including 13 Insurance Committee patients.)

Period of time (in weeks) from date of receipt of application to date of admission.

5	Cases waited	1 week	
5	" "	2 weeks	
3	" "	3 "	
5	" "	4 "	
2	" "	5 "	
4	" "	6 "	
4	" "	7 "	
1	" "	8 "	
4	" "	9 "	
3	" "	10 "	
4	" "	11 "	
7	" "	12 "	
6	" "	13 "	
6	" "	14 "	
3	" "	15 "	
1	" "	16 "	
5	" "	17 "	
1	" "	18 "	
1	" "	19 "	
4	" "	20 "	
3	" "	21 "	
1	" "	23 "	
1	" "	26 "	
1	" "	29 "	
1	" "	30 "	
<hr/>		<hr/>	
81 average—		11 weeks, 1 day.	

Discharged from Sanatorium 44 Males, 36 Females
Total 80.

The "Class" in which the 80 Discharged cases were placed on admission to the Institution (Winsley Resident Medical Officer's selection).

Class	I.	Cases	23
	„ II.	„	30
	„ III.	„	21
	„ IV.	„	1
Unclassified	...		5
			—
			80
			—

After History.

AFTER HISTORY OF PATIENTS TREATED IN THE BRISTOL
MAINTAINED BEDS AT WINSLEY SANATORIUM.

Year of Discharge	Total No. Discharged	Alive on 31st December, 1912	Well and Working capacity Maintained	Whereabouts unknown	Dead
1905	45	3	1	17	26
1906	67	9	8	16	42
1907	68	15	13	33	20
1908	78	18	14	22	38
1909	75	20	16	29	26
1910	67	22	20	17	28
1911	68	27	22	27	14

The following Table shows how the 121 applications were dealt with:—

47	...	"Selected" and "Admitted."
10	...	Not accepted by Committee.
4	...	Rejected by Medical Consultative Board as "not suitable."
24	...	Withdrawn.
4	...	Died since receipt of application.
6	...	Gained admission to other Sanatoria
11	...	Admitted to Ham Green Sanatorium.
15	...	Referred to Insurance Committee.

121

Condition stated upon Discharge.

66	...	Discharged improved
2	...	Discharged little improved.
12	...	Discharged not improved

80 Total

Ham Green Sanatorium.

Twenty patients were admitted to Ham Green Sanatorium for four months' treatment during the Autumn (Females) 10 being Health Committee patients and 10 Insurance Committee patients.

Classification:—

Early cases	...	...	7
Moderately advanced	...	...	5
Advanced	...	...	8
			<hr/>
			20
			<hr/>

When the *early* cases were discharged, all symptoms and nearly all the physical signs of the disease had disappeared. These cases may be regarded as being cured, for the time at least, and were fit to resume their ordinary occupations. In none of these was the tubercle bacillus found on discharge.

Four of the moderately advanced cases were discharged with all symptoms of the disease gone, including the disappearance of the bacillus from the sputum. These were quite able to resume work, the disease being arrested. In one the disease still showed some signs of occasional activity—a chronic fibroid variety of case—but was greatly improved.

Among the 8 advanced cases—of which three were complicated by laryngitis—in six the disease was arrested, the patients being restored to very fair health; one was no better, and one was worse.

All the patients were treated with continuous inhalation, combined with graduated labour and tuberculin injections where advisable.

I am, my Lord Mayor and Gentlemen,

Your obedient Servant,

D. S. DAVIES, M.D., L.L.D., D.P.H.

Medical Officer of Health for the City and County of Bristol, and for the Port of Bristol; General Medical Superintendent City Hospitals; Lecturer on the Principles and Practice of Public Health, University of Bristol (Medical School); and Internal Examiner in Public Health to the University; Past-President of the Society of Medical Officers of Health; of the Bath and Bristol Branch of the British Medical Association; and of the Bristol Medico-Chirurgical Society; formerly Examiner in State Medicine (M.D. Examination), University of London; Member of Board of Examiners of the Royal Sanitary Institute; Late Medical Inspector (on Cholera Survey and General Sanitary Survey of England) to H.M. Local Government Board; Surg. Col. (retd.), V.D. 1st Glos. R.G.A. (V.); Lt. Col. R.A.M.C. Sanitary Service Territorial Force; etc.

June, 1913.

CITY OF BRISTOL.

January 3rd, 1912.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1911. NOTICE TO INSPECTORS.

Special Action.

When visiting Pulmonary Tuberculosis cases, the Inspector should report to the Medical Officer of Health any steps that may appear to him to be necessary or desirable for preventing the spread of infection, and for removing conditions favourable to infection.

Cards.

Every detail upon the small Phthisis card must now be filled in, and special care taken to enter the names of the schools attended by children who live in a house from which a case of Phthisis has been notified. Sunday Schools and other meetings to be noted.

The School Card should be filled up without delay, and handed in for transmission to the School Medical Officer.

The Position of Persons Notified.

Tuberculosis of the Lung is usually a chronic disease, the infection is limited, and infection can be prevented by the patient himself when he has learnt, and is not too ill to practise, elementary precautions. This is the reason for the issue of a special code of regulations under Section 130 of the Act of 1875. The fact that the patient may be trained, and may as a result cease to be a source of infection, in which case he need be subjected to no disability, should be made clear to the patient.

It is, of course, unnecessary and undesirable that notification should involve publicity. The Local Government Board have no doubt that Local Authorities and their officers will avoid doing anything which would cause pain or annoyance to patients or their friends. It cannot be too strongly emphasised that any records in relation to persons notified should be regarded as strictly confidential documents, for whose custody the Medical Officer of Health is personally responsible.

(Signed) D. S. DAVIES, M.D.

TABLE B. Showing Population, Births, Marriages, and Deaths, and Birth and Death Rates in Bristol, for the 25 Years, 1888—1912.

	Estimated Population.	Registered Births.	*Marriages in the District of the Bristol Union.	DEATHS.			ANNUAL RATES.					
				Total Deaths at all Ages.	Under 1 Year.	Over 1 and under 5.	Over 60.	In Public Institutions.	Birth Rate per 1,000.	Death Rate per 1,000.	Infantile Mortality to 1,000 Births.	Zymotic Rate.
1888	217,266	6,608	981	3,816	824	432	1,138	710	30.4	17.5	124.6	1.3
1889	218,848	6,694	932	4,021	976	595	1,062	660	30.5	18.3	145.8	2.2
1890	220,442	6,634	1,033	4,532	991	597	1,265	730	30.0	20.5	149.4	2.1
1891	222,049	6,725	937	4,631	972	603	1,371	815	30.3	20.8	144.5	1.7
1892	223,592	6,563	973	4,331	953	634	1,197	776	29.3	19.3	145.2	2.0
1893	225,028	6,788	955	4,241	959	411	1,283	851	30.1	18.8	141.2	1.6
1894	226,578	6,393	920	3,888	848	524	1,077	769	28.8	17.1	148.3	2.0
1895	228,139	6,622	846	4,108	935	414	1,321	837	29.0	18.0	141.1	1.1
1896	230,626	6,537	863	3,960	908	476	1,130	793	27.8	16.8	138.9	1.8
1897	232,242	6,514	884	3,988	949	434	1,195	821	28.0	17.1	145.6	1.8
1898	316,900	9,061	837	5,441	1,491	795	1,455	881	28.5	17.1	164.5	2.6
1899	320,911	9,336	2,714	5,844	1,467	567	1,781	1,049	29.0	18.2	157.1	1.8
1900	324,973	8,972	2,839	5,397	1,185	673	1,561	968	27.6	16.6	131.9	1.8
1901	329,086	8,889	2,786	5,249	1,159	558	1,379§	1,039	27.0	15.9	130.4	1.6
1902	334,632	9,368	2,827	5,905	1,225	965	1,351	1,173	27.4	17.3	130.7	2.7
1903	338,895	9,239	2,738	4,822	1,075	467	1,189	1,094	27.2	14.2	116.3	1.1
1904	343,204	9,145	2,894	5,347	1,222	545	1,386	1,162	26.6	15.5	133.7	1.6
1905	358,515	9,649	2,870	5,286	1,182	623	1,336	1,197	26.9	14.7	122.4	1.6
1906	363,223	9,372	2,793	5,299	1,196	495	1,414	1,188	25.8	14.5	127.6	1.6
1907	367,979	8,915	3,001	4,897	900	327	1,500	1,211	24.2	13.3	100.9	0.8
1908	372,785	8,752	2,806	5,230	1,102	509	1,522	1,247	23.0	13.7	125.8	1.2
1909	377,642	8,507	2,670	4,869	860	375	1,518	1,288	22.5	12.8	101.0	0.9
1910	382,550	8,258	2,670	4,523	746	293	1,474	1,283	21.5	11.8	90.3	0.6
1911	357,509	7,751	2,763	5,537	1,107	558	1,678	1,460	21.0	15.4	142.8	2.2
1912	359,400	7,681	2,933	4,894	789	425	1,663	1,282	21.3	13.6	102.7	0.9

* Previous to 1899 this includes the Registration Sub-Districts of St. Mary Redcliff, Castle Precincts, St. Paul, St. James, and St. Augustine only.

† The Marriages for 1899 were for the first time given for an area co-extensive with the whole enlarged City.

§ Over 65, according to the new age grouping in the L.G.B. Tables.

TABLE C. Showing Number of Deaths from Zymotic Diseases in Bristol, during the 25 years 1888-1912.
ENLARGED CITY.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Small-pox ...	26	...	...	1†	...	24	16§	...	5	1	...	...	...	...	1	3	1||	...	...	1	...	9¶	...	...	3
Diphtheria ...	26	15	16	16	38	53	50	34	38	36	44	33	103	124	189	119	105	59	82	65	69	55	38	42	48
Incl'dg. M.Croup																									
Erysipelas ...	21	16	9	12	21	11	8	16	10	5	6	13	12	21	12	8	9	8	7	3	6	3	7	9	11
Scarlet F. ...	45	26	40	37	47	35	16	16	59	18	14	13	39	36	66	49	36	39	27	26	10	12	12	16	12
Typhus ...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric F. ...	28	38	33	23	18	26	21	22	20	47	26	35	44	40	59	21	26	13	21	15	10	12	9	18	7
Puerperal F.*	17	11	12	7	25	16	11	8	8	6	11	22	20	17	17	14	16	6	14	11	7	17	14	10	15
Measles ...	61	185	92	239	105	25	116	8	143	57	309	38	200	7	411	11	94	180	140	36	96	90	32	164	153
Whooping Cough ...	38	105	201	53	154	80	177	45	64	118	110	118	54	189	105	65	110	123	102	26	128	56	66	142	69
Diarrhoea ...	68	131	96	58	99	125	65	143	106	153	348	345	165	134	110	107	206	169	213	133	154	116	76	407	66

*Previous to 1884. Puerperal Fever was not separated in the Local returns from Puerperal Diseases generally.

†This death occurred in the Novers Hill Hospital outside the City, and so did not appear in the General Returns.

‡Of these deaths one occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

§Of these deaths five occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

||This death occurred on the Hospital Ship, Avonmouth. Patient was admitted from Keynsham Workhouse, outside the City.

¶Including one death which occurred at Cossham Hospital, admitted from Chipping Sodbury Rural District.

CITY OF BRISTOL.

Infectious Disease (Notification Act), 1889.

Notifications received during each Quarter of 1912.

1912.—Table a.

NOTIFIABLE DISEASE.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Total of each disease.
Small Pox ...	22	30	9	1	62
Cholera Choleraic Diarrhœa	...	...	...	...	...
Diphtheria (including Membranous Croup)	127	115	175	226	643
Erysipelas ...	87	45	51	70	253
Scarlet Fever ...	147	123	132	178	580
Typhus Fever ...	...	...	...	...	...
Enteric Fever ...	29	14	12	24	79
Relapsing Fever...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...
Puerperal Fever ..	13	8	5	7	33
Cerebro-Spinal Fever	1	1	1	3	6
Acute Poliomyelitis	1	1	...	4	7
Totals in each Quarter	428	337	385	513	1,663

CITY OF BRISTOL.

TABLE b. Notification and Deaths Registered by Sub-Districts during the year 1912.

	Small Pox. Cases D'ths	Diphtheria (including Membranous Group.) Cases D'ths	Erysipelas. Cases D'ths	Scarlet Fever. Cases D'ths	TYPHUS. Cases D'ths	ENTERIC TYPHOID. Cases D'ths	Relap- sing. Cases D'ths	Continued. Cases D'ths	PUER- PERAL. Cases D'ths	Total cases in each Sub- District.
Ashley ...	1	68	27	96		9			2	203
Bedminster ...	20	132	48	76		21			5	293
Bristol Central ...	11	48	33	47		7			7	153
Clifton ...	2	32	14	49		7			4	108
Knowle ...	5	55	10	37		4			1	112
St. George ...	17	90	42	77		14			6	246
St. Philip ...	2	71	36	55		9			1	178
Stapleton ...	1	98	15	93		4			5	211
Westbury-on-Trym ...		26	6	21		1			1	55
Public Insts. ...	1	18	21	15		5			2	60
Admitted to Public Insts. from outside of Borough	2	5	1	14		7			2	31
Total cases of each disease	62	643	253	580		79			33	1,650
Total deaths from each disease ...	3	48	11	12		7			15	96
Percentage of deaths to known cases ...	4·8	7·4	4·3	2·0		8·8			45·4	5·8

NOTIFICATION 1912.

CITY OF BRISTOL.

TABLE c. Showing the number of Cases of Infectious Disease notified under the Infectious Disease Notification Act, 1889, since its adoption in 1890.

	ENLARGED CITY.																						
	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Small-pox ...	0	16	0	165	201	4	42	10	2	0	0	1	6	46	34	13	32	6	1	38	4	0	62
Diphtheria (including M. Group)	56	70	106	141	128	165	258	205	217	215	506	908	1,109	1,134	1,051	1,021	839	926	924	712	556	584	643
Erysipelas ...	105	135	196	230	154	195	246	203	263	337	342	392	376	244	256	303	239	244	223	199	177	309	253
Scarlet Fever ...	559	888	1,442	1,245	485	562	1,352	511	382	697	1,957	2,206	2,724	2,168	1,258	1,085	1,019	886	486	692	1,216	953	580
Typhus ...	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Enteric Fever ...	122	117	135	122	90	89	110	350	113	219	285	281	319	134	172	76	120	74	103	66	85	148	79
Continued or Doubtful Fever	6	8	3	6	1	1	2	0	0	2	2	2	1	0	0	0	0	0	0	0	0	0	0
Puerperal Fever	11	11	34	30	18	16	21	10	18	36	46	43	39	31	27	30	37	36	22	36	39	26	33

TABLE I. Vital Statistics of Whole District during 1912 and Previous Years.
CITY OF BRISTOL.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate per 1000 population.	Under 1 Year of Age		At all Ages.					Number	Rate per 1000 population.
				Number	Rate per 1000 Births-registered.	Number	Rate per 1000 population.					
1	2	3	4	5	6	7	8	9	10	11	12	13
1902	334,632	9,368	27.4	1,225	130.7	5,905	17.3	1,173	115		5,790	16.9
1903	338,895	9,239	27.2	1,075	116.3	4,822	14.2	1,094	118		4,704	13.8
1904	343,204	9,135	26.6	1,222	133.7	5,347	15.5	1,162	109	4	5,238	15.2
1905	358,515	9,649	26.9	1,182	122.4	5,286	14.7	1,197	97	2	5,193	14.4
1906	363,223	9,372	25.8	1,196	127.6	5,299	14.5	1,188	101	2	5,200	14.3
1907	367,979	8,315	24.2	900	100.9	4,897	13.3	1,211	113	1	4,785	13.0
1908	372,785	8,753	23.0	1,102	125.8	5,230	13.7	1,247	131	10	5,109	13.4
1909	377,642	8,507	22.5	860	101.0	4,869	12.8	1,288	130	6	4,745	12.5
1910	382,550	8,258	21.5	746	90.3	4,523	11.8	1,283	146	8	4,385	11.4
1911	357,509	7,751	21.0	1,107	142.8	5,537	15.4	1,460	160	53	5,430	15.1
Average for Years 1902-1911	359,693	8,894	24.7	1,061	119.2	5,171	14.3	1,230	122	*	5,057	14.0
1912	359,400	7,681	21.3	789	102.7	4,894	13.6	1,282	132	58	4,820	13.4

* The information required is not available.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made should be given on the back of this Table.

Area of District in acres, 17,460. Total population at all ages ... 357,059—At Census of 1911.

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions within the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
<p>ROYAL INFIRMARY. GENERAL HOSPITAL. CHILDREN'S HOSPITAL.</p> <p>COSSHAM HOSPITAL. CONVALESCENT HOME. EYE HOSPITAL. HOMŒOPATHIC HOSPITAL. ORTHOPÆDIC HOSPITAL.</p>	<p>ROYAL INFIRMARY. GENERAL HOSPITAL. CHILDREN'S HOSPITAL.</p> <p>COSSHAM HOSPITAL. CONVALESCENT HOME. EYE HOSPITAL. HOMŒOPATHIC HOSPITAL. ORTHOPÆDIC HOSPITAL.</p>	<p>CITY HOSPITALS:— NOVERS HILL, HAM GREEN,</p> <p>CLIFT HOUSE (closed July, 1906.)</p>
<p>Municipal Institutions (within the City)—</p> <p>SOUTHMEAD WORKHOUSE. EASTVILLE WORKHOUSE. STAPLETON WORKHOUSE. LUNATIC ASYLUM.</p>		

CITY OF BRISTOL.

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Table II.

Vital Statistics of Separate Localities (Registration Sub-Districts) in 1912 and previous years.

NAMES OF LOCALITIES.	1.—ASHLEY.				2.—BEDMINSTER.				3.—BRISTOL CENTRAL.				4.—CLIFTON.				5.—KNOWLE.				6.—ST. GEORGE.				7.—ST. PHILIP.				8.—STAPLETON.				9.—WESTBURY-ON-TRYM.			
	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births Registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births Registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births Registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births Registered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
*1902 ...	40,881	875	502	100	61,672	2,087	968	237	44,744	1,131	829	176	44,260	665	591	77	13,709	452	199	56	58,194	1,842	884	253	48,891	1,665	997	258	22,191	607	214	60				
1903 ...	42,039	943	462	92	63,142	2,041	797	229	43,726	1,065	618	139	44,435	660	494	56	14,058	451	153	39	59,738	1,822	747	214	48,986	1,614	711	203	22,771	553	260	64				
1904 ...	42,842	894	411	75	64,505	2,003	850	243	42,793	1,027	706	157	44,446	688	556	68	14,679	522	200	65	61,670	1,779	853	273	48,810	1,545	814	238	23,459	575	241	62				
1905 ...	44,144	921	445	86	65,877	2,072	826	234	41,864	1,042	771	162	44,462	702	558	69	15,302	548	199	50	63,612	1,792	759	216	48,639	1,586	735	226	24,151	556	222	68	10,464	347	135	41
1906 ...	45,023	906	468	72	67,261	1,981	865	256	40,936	1,024	665	178	44,483	696	541	75	15,928	530	210	57	65,567	1,703	706	196	48,472	1,551	803	238	24,847	555	251	57	10,706	334	141	34
1907 ...	45,909	908	469	68	68,652	1,937	775	195	40,011	920	621	109	44,504	620	507	67	16,558	512	214	44	67,533	1,551	623	144	48,310	1,494	648	156	25,547	569	275	56	10,950	300	99	22
1908 ...	46,802	837	501	81	70,055	1,765	787	217	39,087	957	628	156	44,539	634	530	58	17,191	504	197	49	69,511	1,635	720	198	48,152	1,413	757	229	26,252	589	216	57	11,196	324	107	28
1909 ...	47,702	803	485	59	71,469	1,736	709	175	38,165	915	621	129	44,573	670	542	65	17,828	487	172	26	71,501	1,541	635	154	47,999	1,448	621	153	26,961	524	238	47	11,444	272	118	24
1910 ...	50,361	799	412	46	69,389	1,623	619	143	37,110	937	509	99	46,647	686	518	68	18,430	466	181	31	71,591	1,512	605	145	49,653	1,384	567	139	27,676	506	215	29	11,693	244	101	17
1911 ...	47,378	711	524	71	61,176	1,579	832	226	38,485	867	603	141	42,466	640	582	76	20,150	447	185	46	58,478	1,421	793	216	50,215	1,259	793	207	26,149	492	272	63	12,562	260	117	18
Averages of Years 1902 to 1911	45,308	859	467	75	66,319	1,882	802	215	40,692	988	657	144	44,181	666	541	67	16,383	491	191	46	64,739	1,659	732	200	48,812	1,495	744	204	25,000	552	240	56				
1912 ...	48,091	763	506	56	61,720	1,581	744	163	37,582	796	562	95	41,971	650	504	64	21,098	426	187	28	59,100	1,400	663	141	50,103	1,234	652	157	26,780	461	231	39	12,955	277	109	17

* The Registration Sub-districts were so interchanged at the extension of the City in 1897, by the consequent re-arrangement of boundaries in 1898, that this Table cannot be given for previous years.

TABLE III.

CITY OF BRISTOL.

Cases of Infectious Disease notified during the Year ending 28th December, 1912.

[illegible]

TABLE IV.

CITY OF BRISTOL.
Causes of, and Ages at, Death during the Year ending 28th December, 1912,

CAUSE OF DEATH	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES									DEATHS IN LOCALITIES (AT ALL AGES)											DEATHS IN PUBLIC INSTITUTIONS
	All Ages	Under 1	1 and under 2	2 and under 5	5 and under 15	15 and under 25	25 and under 45	45 and under 65	65 and upwards	Ashley	Bedminster	Bristol Central	Clifton	Knowle	S. George	S. Philip	Stapleton	Westbury-on-Trym	Municipal Institutions	Not belonging to Borough	
1-ENTERIC FEVER ...	7	..	..	1	1	..	4	1	..	1	1	2	..	..	..	..	1	..	..	2	6
2-SMALL-POX ...	3	..	2	..	..	..	..	1	..	..	..	2	..	..	..	..	1	..	..	..	3
3-MEASLES ...	153	33	53	57	9	1	..	..	..	..	50	22	9	5	20	36	9	..	2	..	9
4-SCARLET FEVER ...	12	..	1	4	7	..	..	..	..	..	2	1	..	..	2	..	4	..	..	3	8
5-WHOOPING COUGH ...	69	26	23	15	5	..	..	..	..	6	10	5	6	3	13	19	3	4	..	..	4
6-DIPHTHERIA & CROUP...	48	3	3	19	21	2	..	..	..	4	12	5	1	4	9	2	7	1	2	1	38
7-Influenza ...	49	2	..	..	2	1	5	16	23	5	6	3	2	..	5	5	2	1	19	1	19
8-Erysipelas ...	11	1	..	..	..	..	1	5	4	1	1	2	..	..	2	2	..	..	3	..	6
9-Phthisis (Pulmonary Tuberculosis)...	402	..	3	4	16	69	191	103	16	32	55	40	32	20	49	52	17	8	94	3	113
10-Tuberculous Meningitis ...	48	12	8	10	13	2	3	..	..	7	11	4	5	2	8	5	5	..	..	1	15
11-Other Tuberculous diseases	54	10	5	4	11	5	10	7	2	6	4	6	5	3	8	8	1	1	8	4	22
12-Cancer, malignant disease ...	402	..	..	3	..	3	47	167	182	56	48	43	55	19	38	46	18	10	54	15	115
13-Rheumatic Fever ...	24	..	..	..	10	6	1	3	4	4	3	..	3	1	6	3	2	1	1	..	2
14-Meningitis ...	39	10	5	5	7	5	1	1	5	3	9	3	2	1	12	5	3	..	1	..	14
14A-Cerebro-spinal Meningitis ...	3	..	..	..	2	..	1	..	..	..	2	..	..	..	..	..	..	..	1	..	3
15-Organic Heart Disease ...	467	1	1	3	12	21	53	147	229	68	58	71	60	13	49	56	18	14	54	6	72
16-Bronchitis ...	414	82	14	6	4	2	9	72	225	37	67	70	33	10	78	65	22	11	19	2	28
17-Pneumonia (all forms) ...	378	102	53	47	16	10	47	47	56	15	67	43	34	14	59	75	21	10	36	4	112
18-Other Diseases of Respiratory Organs ...	110	4	6	4	1	6	22	26	41	15	22	9	9	2	15	7	7	1	20	3	36
19-DIARRHŒA and ENTERITIS ...	66	56	10	..	..	..	..	..	..	6	15	7	6	3	7	10	5	1	3	3	15
20-Appendicitis and Typhlitis ...	27	..	..	1	8	6	8	2	2	5	1	5	1	1	1	1	4	..	..	8	20
21A-Alcoholism ...	19	..	..	..	..	..	4	10	5	3	5	1	3	1	2	4	..	..	..	..	2
22-Nephritis & Bright's Disease	6	..	..	..	..	..	1	5	..	..	..	1	1	..	..	..	..	..	3	1	4
23-Puerperal Fever ...	165	2	..	1	2	8	26	78	48	26	24	19	11	5	25	19	5	9	17	5	44
24-Other Accidents and Diseases of Pregnancy & Parturition	15	..	..	..	..	3	12	..	..	1	3	..	3	1	1	1	..	1	2	2	10
25-Congenital Debility and Malformation, including Premature Birth ...	16	..	..	..	..	2	13	1	..	2	3	3	2	1	1	2	..	1	..	1	5
26-Violent Deaths ...	293	291	2	..	..	..	..	..	..	29	56	27	21	9	58	60	12	7	12	2	51
27-Suicide ...	156	10	2	12	20	16	21	38	37	11	15	13	24	6	18	25	4	5	13	22	71
28-Other Defined Diseases ...	19	..	..	..	..	1	9	5	4	2	4	3	2	1	3	2	1	..	..	1	5
29-Diseases ill-defined or unknown ...	1403	144	12	24	30	33	121	270	769	158	188	148	171	62	173	140	59	23	239	42	429
All Causes ...	16	..	1	1	..	..	1	2	11	3	2	4	3	..	1	2	..	..	1	..	1
All Causes ...	4894	789	204	221	197	202	611	1007	1663	506	744	562	504	187	663	652	231	109	604	132	1282

CITY RATES.

No. of Births		Birth Rate	DEATH RATE			Principal Epidemic Disease (Zymotic) Rate	Infantile Rate
			Year 1912	Last Year	10 Years' Average		
M. 3964	F. 3717	21.37	13.61	15.48	14.37	0.99	102.72
7681							

Average age at Death of Persons aged 65 and upwards, 75 yrs. 2 mos.

Births of Illegitimate Children (Males 148, Female 122)—270

Total Deaths „ (under 5) („ 42 „ 31) 73

Inquests 464

Uncertified Deaths 0

Death Rates		1912	1913	1914	1915	1916	1917	1918	1919	1920	...	...	...
District Birth Rates	Deaths of Infants under 1	15.86	25.61	21.17	15.48	20.19	23.68	24.62	17.21	21.38	...	...	...
		56	163	95	64	28	141	157	39	17	24	5	...
Number of Births	Infantile Rate	M. 382	826	412	346	210	733	626	231	151	47	...	...
		F. 381	755	384	304	216	667	608	230	126	46	...	...
		763	1581	796	650	426	1400	1234	461	277	93	...	...
		73.39	103.09	119.34	98.46	65.72	100.71	127.22	84.59	61.37	...	...	...

INFANTILE MORTALITY during the Year ending 28th December, 1912.
Deaths from Stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.					Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under 1 Year.
All Causes—					183	59	49	37	328	83	63	48	35	34	38	27	35	34	34	30	789
Certified ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Uncertified ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Small-pox ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Chicken-pox ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Measles ... ..					..	..	..	..	..	..	..	..	..	..	4	1	9	4	9	6	33
{ Scarlet Fever ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Diphtheria and Croup ... ..					..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	3
{ Whooping Cough ... ..					..	..	1	..	1	3	3	3	3	1	2	1	3	3	3	1	27
{ Diarrhoea, all forms					1	2	3	2	8	4	4	1	4	6	1	1	..	..	2	..	31
{ Enteritis, Muco-Enteritis, Gastro-Enteritis ... ..					..	2	2	1	5	3	3	2	4	3	..	..	..	..	2	1	23
{ Tuberculous Meningitis ... ..					..	..	..	..	..	1	2	1	2	1	1	1	1	..	1	1	12
{ Abdominal Tuberculosis—					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Tuberculous Peritonitis, Tuberculous Enteritis, } ... ..					..	..	..	..	..	1	..	1	..	1	3	1	..	..	..	..	7
{ Tabes Mesenterica ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Other Tuberculous Diseases ... ..					..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	3
{ Premature Birth					108	17	13	10	148	10	2	..	..	..	1	..	..	..	..	..	161
{ Congenital Malformations					9	3	2	..	14	5	1	1	2	..	..	..	..	..	1	2	26
{ Want of Breast-milk, Starvation ... ..					..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	2
{ Atrophy, Debility, Marasmus					23	12	11	6	52	11	15	7	5	5	3	1	2	..	..	1	102
{ Atelectasis					7	1	..	..	8	..	..	..	..	..	..	..	..	..	..	..	8
{ Injury at Birth					1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
{ Erysipelas ... ..					..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
{ Syphilis ... ..					..	1	3	1	5	1	..	..	1	1	..	..	..	..	..	..	8
{ Rickets ... ..					..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	1	4
{ Meningitis (not Tuberculous) ... ..					..	1	..	..	1	..	..	..	1	..	2	1	..	4	1	..	10
{ Convulsions					5	4	2	4	15	6	5	5	2	2	1	2	3	4	1	2	48
{ Gastritis ... ..					..	..	1	..	1	3	1	1	..	..	2	..	..	..	..	..	8
{ Laryngitis ... ..					..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
{ Bronchitis					2	5	4	5	16	18	11	10	2	5	5	2	2	7	3	1	82
{ Broncho-Pneumonia					1	3	3	2	9	5	9	5	4	6	6	7	9	6	8	8	82
{ Pneumonia ... ..					..	..	1	2	3	..	..	2	..	..	2	4	2	3	..	2	18
{ Croup—Spasmodic ... ..					..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
{ Suffocation, overlying ... ..					..	..	1	1	2	1	1	1	..	..	..	..	..	..	1	..	6
{ Other Causes					26	7	2	2	37	7	6	7	4	2	5	4	1	2	2	4	81
					183	59	49	37	328	83	63	48	35	34	38	27	35	34	34	30	789

Nett Births during the Year	M.	F.
	Legitimate 3816	3595
	Illegitimate 148	122

Nett Deaths during the Year	M.	F.
	Legitimate Infants 447	285
	Illegitimate Infants 31	26

PART II.

GENERAL.

WATER SUPPLY.

The Bristol Water Works Company.

SOURCES OF SUPPLY.—(1) Springs in the triassic conglomerates and carboniferous limestone of the Mendip Hills, 16 miles from the City. (2) The Yeo Reservoir and Richford and Langford Springs, 12 miles from City. (3) Deep Wells at Chelvey in the New Red Sandstone (triassic).

STORAGE RESERVOIRS.—At Barrow Gurney, where the water is filtered before delivery.

WATER SERVICE.—Constant.

AVERAGE DAILY CONSUMPTION.—23 gallons per head.

The City Analyst furnishes the following report :—

Analysis of Water.

Twenty-one samples were examined. Eleven were received from the Medical Officer of Health, of which number, nine showed evidence of sewage pollution, and one was of a suspicious character.

One sample examined for economic purposes, gave the following figures for the mineral analysis of the solid residue.

Ca. Co ₃	...	18.41	parts per	100,000
Mg. Co ₃	...	8.49	,,	100,000
Ca. So ₄	...	4.20	,,	100,000
Si. O ₂	...	.54	,,	100,000

The water was too hard for economic purposes.

Chief Superintendent Kane submitted a sample of bath water. This contained an excess of organic matter, but no bacteriological contamination was found.

ANALYTICAL DATA (Chemical & Bacteriological) OF CITY WATER SUPPLY DURING 1912.

Number of Sample	3		4		6		8		10		13		18		19		21	
Date of Collection	5 February		25 March		15 April		21 May		14 June		1 August		25 October		11 November		18 December	
Place of Collection	Tap in Laboratory		Tap in Laboratory		Tap in Laboratory		Tap in Laboratory		Tap in Laboratory		Tap in Laboratory		Tap in Laboratory		Barrow Gurney		Tap in Laboratory	
Physical appearance	Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus		Clear, bright, neutral to litmus	
Remarks on Solids	No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids		No smell on heating solids	
	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon	Parts per 100,000	Grains per gallon
Oxygen absorbed ... ..	...	...	·042	·029	·02	·014	·03	·021	·028	·019	015	·01	..	...	...	...	...	..
Free Ammonia	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...
Albuminoid Ammonia	·0056	0038	·0048	·0033	·0026	·0018	·0025	·0017	·002	·0014	0055	·0038	·0086	·006	·0045	·0031	·0062	·0043
Nitrogen in Nitrates	·112	·078	·128	·089	·144	·10	·144	10	·16	·12	·048	·034	·064	·048	·08	·056	·08	·056
Chlorine as Chlorides	1·5	1·05	1·5	1·05	1·42	1·0	1·57	1·1	1·57	1·1	1·57	1·1	1·28	·9	1·28	·9	1·14	·8
Total Hardness ... ..	...	12·5°	...	13·17°	...	12·6°	...	12·6°	...	12·1°	...	12·8°	...	12·2°	...	11·7°	...	11°
Permanent Hardness ... ..	...	4·25°	...	4·24°	...	4·8°	...	4·4°	...	5·0°	...	4·3°	...	4·7°	...	4·0°	...	3·8°
Temporary Hardness ... ..	...	8·9°	...	8·9°	...	7·8°	...	8·2°	...	7·1°	...	8·5°	...	7·5°	...	7·7°	...	7·2°
Total Solids	28·5	19·95	28·5	19·95	28·75	20·12	31·0	21·7	29·5	20·65	24·5	17·15	26·25	18·37	30·0	21·0	27·25	19·07
Mineral Matter	18·75	13·13	20·75	14·53	24·75	12·32	21·25	14·37	19·0	13·3	16·5	11·55	20·75	14·52	24·0	16·8	21·0	14·7
Loss on ignition	9·75	6·82	7·75	5·42	4·0	2·8	9·75	6·83	10·5	7·35	8·0	5·6	5·5	3·85	6·0	4·2	6·25	4·37
Nitrites	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...
Lead	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...	nil	...
Colonies per cc on Gelatine at 22° C	40	...	...	...	16	...	8	...	60	...	14	...	20	...	15	...	10	...
Colonies per cc on Agar at 37° C	8	...	...	...	2	...	2	...	2	...	2	...	3	...	5	...	3	...
MacConkey's Bile Salt broth (B. coli test) 25cc water used	Gas :—	—	...	...	—	...	—	...	—	...	—	...	—	...	—	...	—	...
	Acidity :	—	...	...	—	...	—	...	—	...	—	...	—	...	—	...	—	...

OPINION.—The organic purity of the City water supply is maintained, the variations in the Albuminoid Ammonia figures being slight. The figures for Oxidized Nitrogen and Hardness are low. The Bacteriological figures are equally satisfactory. EDWARD RUSSELL, B.Sc., F.I.C., City Analyst.

Private Wells.

In the older parts of the City many private wells still exist, the water from which is often preferred to the Company's supply, on various grounds. It is difficult in most cases to convince consumers of the ever-present danger that must attend the use of water drawn from wells in the midst of a large city where the subsoil from which the water is collected is necessarily loaded with the filth resulting from the life-conditions of more than 361,000 persons.

ASSOCIATION OF MUNICIPAL AND SANITARY ENGINEERS, 1877 :—

The remarks of the late W. W. Stoddart, F.G.S., are instructive on this point.

“ The geological character of any locality will often
 “ determine the probable purity or impurity of a well, and
 “ our City is pre-eminently an example of this. In Clifton
 “ and Kingsdown we have thick and impervious beds,
 “ dipping to the North-east at an angle of 30° to 70° ; in
 “ the Parish of St. Paul we have horizontal beds of porous
 “ triassic sands; in St. Philip's we have alluvial beds of
 “ peat and gravel; while in the outlying districts of
 “ Stapleton and Fishponds are thick layers of pennant
 “ rock, so broken up by innumerable fissures, that every
 “ well is full of surface water. Bristol, from the rapid dip
 “ of its fundamental strata, from an altitude of 300 feet
 “ above to 20 feet below the mean sea level, at an angle of
 “ 30 to 50 degrees, may be considered unusually well situ-
 “ ated for drainage purposes, yet this very character is
 “ the worst possible one for the purity of our well water.
 “ No well, especially those in the low-lying parts of the
 “ City, is free from liability to sewage contamination from
 “ the great hydraulic and lateral pressure.

“ The water-bearing strata may be divided into four kinds :—

“ 1.—Where the beds dip greatly and are quite impervious to the passage of water except through their joints and divisions.

“ 2.—Where the beds dip greatly, but are fissured in all directions.

“ 3.—Where the beds are horizontal and impervious.

“ 4.—Where the beds are horizontal and pervious.

“ As an example of the first condition we may instance the silicious beds of the millstone grit that form the northern boundary from Brandon Hill to Cotham. The water flows *between* the strata, bringing with it, comparatively unchanged, all that the water has dissolved from the surface of the ground.

“ On the west side of Brandon Hill are two copious springs, only separated from each other by a few feet of millstone grit. Each of them is abundantly supplied by water from Clifton and Durdham Down, and may at any time be influenced by the extension of buildings and any other sources of contamination that impinge on the strike of the beds between which the water flows.”

Mr. Stoddart here gives an example of a well in King Square, polluted from premises on Kingsdown Parade the pollution following the dip of the beds, and instances the well water in the former Priory of St. James, at one time good, before Kingsdown was built upon, but now much polluted by the sewage of these higher levels.

As to the water supply of Horfield and Bedminster, Mr. Stoddart goes on to say :—

“ The triassic beds of limestone are nearly horizontal, and divided by stiff clays and schists, and form a very doubtful medium for a good supply of potable water. The only exit for rain that has fallen upon and dissolved plentifully the organic impurity, is between the limestone rock and the clay parting.

“The wells of the centre of Bristol and St. Paul’s are
“on strata both horizontal and porous. The centre of
“the city is composed of beds of sand, gravel and peat,
“more than 200 feet in thickness, deposited upon the
“coal measures that reach the Mendips. They are so
“much below the level of the sea that they are always
“subject to tidal infiltration, bringing with it whatever
“sewage it may meet.

“In the Parish of St. Paul, the ground is composed
“entirely of porous Keuper sands and marls, that rest
“upon the millstone grit. They are so porous that,
“if they are penetrated for making sewers, the whole
“of the wells in the immediate vicinity are drained.
“Indeed, there are a great many wells that are quite dry
“from a few having been sunk to a greater depth.”

BRISTOL WATER WORKS.

From a Paper by

Mr. J. A. MACPHERSON, B.Sc., M.Inst.C.E.,
Chief Engineer, Bristol Water Works Company.

The Bristol Water Works Company are specially well provided, having double storage for a large portion of their water from the Yeo Valley, which is stored in the Blagdon Reservoir first and then pumped to the impounding reservoirs at Barrow, where it is again stored, together with the other waters there impounded.

The filters, which have been constructed by Messrs. Taylor, Sons and Santo Crimp, civil engineers, of Westminster, are ten in number, with an acreage of 7.63. The first four, constructed in 1887, had each a depth of 2 feet of filtering medium, consisting of Bideford sand. The Company did not rest content with this provision, and when they added more filters, acting upon the advice of their engineers and chemists, they carried their practice to a greater degree of refinement. Considerable investigations were made by the Company as regards pit-sand in Dorset and Bedfordshire, and sea-sand on the Dorset, Devon, Cornish and Welsh Coasts. Some sand has been obtained from Dorset and the Welsh Coasts, and from France, but the bulk has been obtained from pits in the Lower Green sand at Leighton Buzzard, under stringent specifications. The sites of the pits were carefully chosen where they could be subject to no drainage, and the grade of sand was specified to ensure slow filtration, not more than 3 per cent to be held on a sieve of 20 mesh to the lineal inch, and of the remainder, not more than 8 per cent to pass a sieve of 60 mesh to the lineal inch; the aim being to obtain as nearly as possible a grade of sand to pass a mesh of 30 to the lineal inch, and be held on a mesh of 60 to the lineal

inch. These somewhat exacting conditions have been very closely complied with, and the sand transported in sacks by rail and road from the pits to the filter yard, where it is washed before being spread upon the filters. It may be interesting and within the scope of our subject to remark that most of the sea-sands were too fine, and below the high tide levels were not of regular grade or desirable in certain other respects; the purer shore-sand and of the most regular grade was the blown sand above the highest tide level, but it was too fine. The sea-sand of best character was from the Welsh Coast, which was nearly all quartz, but like other sea-sand, too fine. One shore sand in Cornwall is not sea-sand at all, but the washing down the streams of the quartz from the decomposed granite of the clay district of St. Austell. It is nearly all pure quartz, and most excellent sand, but too coarse for the Bristol Water Works Company. It is used for filter-beds in Cornwall, and its use by the Bristol Waterworks Company would have resulted in a great saving of expense.

The depth of sand upon all the Bristol Filters now varies from 2 ft. 6 in. to 3 ft., but in no case is it allowed to be reduced below 2 ft. This minimum, you will agree, is far on the safe side, seeing that the effective filtration is done in the top film and upper part of the sand, and probably a minimum of 12 inches could have been allowed with safety. It used to be the practice with the Bristol Waterworks Company, in cleaning the filters by skimming the surface, to repeat the process until the thickness was reduced to about twelve inches, when a quantity of washed sand was relaid to restore the sand to its original depth. This practice still obtains with some Waterworks, but the Bristol Company's present practice, which is similar to that of the Metropolitan Water Board, and of many other waterworks undertakings, is at every skimming to replace a like amount upon the filter in a ridge or over a certain

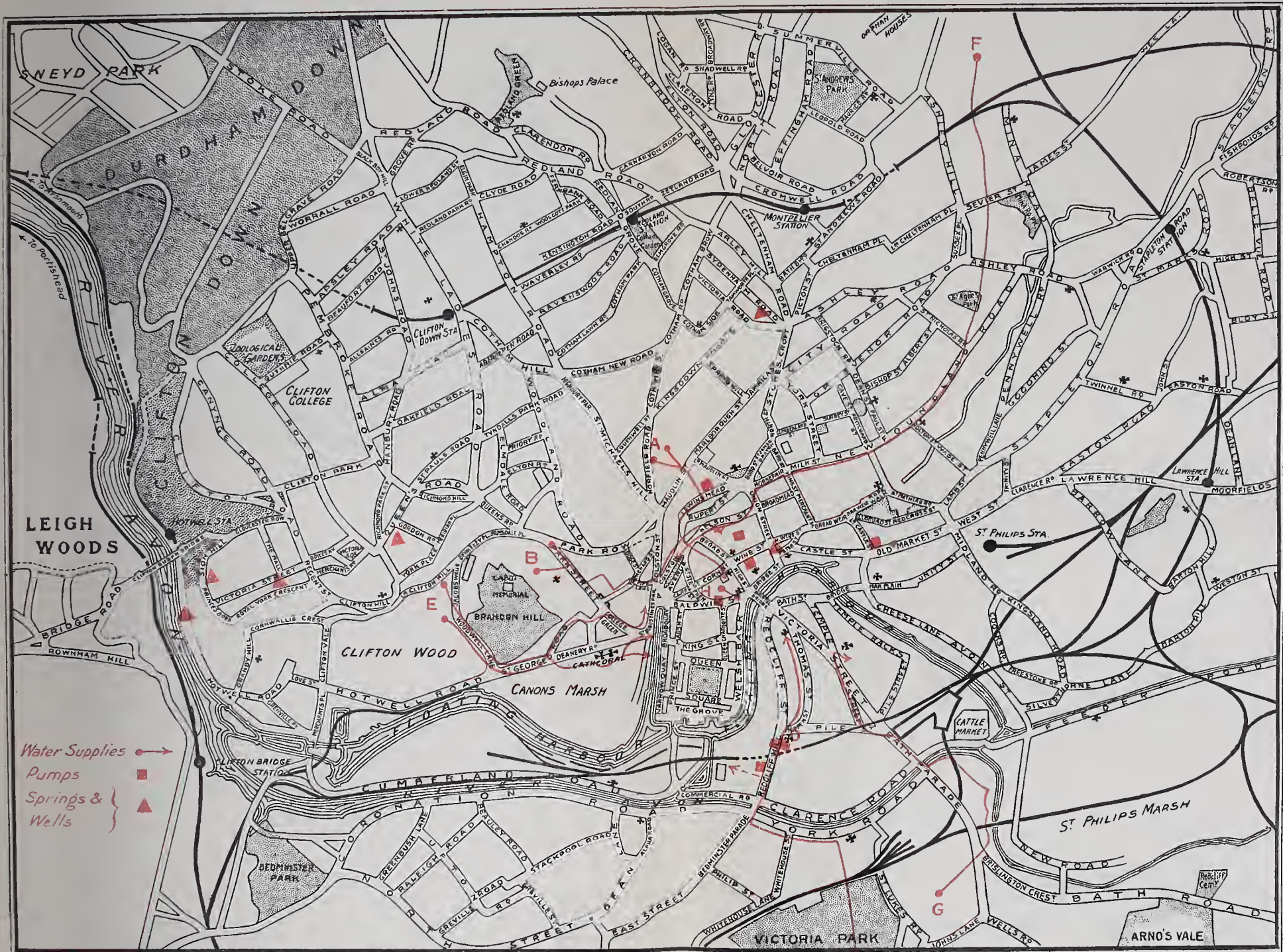
area to a depth of 3 ft. 6 in., the amount so replaced being equal to the whole area skimmed to a depth of about a half-inch. By this means the thickness of sand upon the filters is never reduced in any part by more than 6 ins., generally less.

The frequency with which the filters are skimmed depends upon how soon they become clogged, and this is always ascertainable by the filtering head or difference in level between the water in the filter and the outlet tank. The depth of water on the filters and the thickness of sand are not the prime factors in the case, but it is desirable to have a considerable depth of water above the sand in a filter, as the algae growth is less active than when the water on a filter is shallow.

The rate of filtration to obtain the best results has to receive careful attention, and must be subject to the quality of the water undergoing filtration. In the case of the Bristol Waterworks Company the maximum rate is set at 2·5 gallons per square foot per hour. There are various apparatus for regulating the rate of flow through filters. The Bristol Waterworks have a simple arrangement of vertical warning pipes to each filter, designed by Mr. E. Brough Taylor, the height of the warning pipes which branch off the delivery mains to the filters having been set by experiment to correspond with the head of water in the mains when discharging the maximum rate of 2·5 gallons per square foot per hour. The average rate of filtration at the Bristol Waterworks filters for the year 1910 was 1·06 gallon per square foot per hour, with maximum and minimum rates of 1·49 and ·75 gallons respectively. It will thus be seen that the Bristol rates of filtration were far below the maximum limit.



111.



OLD-TIME WATER SUPPLIES IN BRISTOL.

For the old-time water supplies of Bristol we are indebted to the Friars, and some of these supplies may be dated back to the 12th century. The various supplies, with their elaborate system of passages, conduits and pipes must have involved immense labour, which was assumed, no doubt, largely as a religious duty. Documents granting the right of using surplus waters outside the area of supply are in existence ; and legal disputes appear to have been not uncommon. On the suppression of monasteries the support of the existing water supplies devolved upon churchwardens in the various parishes, and early in the seventeenth century the City Council endeavoured to obtain control over them, but failed ; at the same time an Act was passed prohibiting Sunday trading, and also making it a punishable offence for parishioners to take supplies from any public water supply on Sunday for any purpose whatsoever. Local water supplies played so important a part in the diffusion of Cholera in the middle of the 19th century, and may still prove so real a source of danger in regard to water borne disease, that a knowledge of the remaining supplies may prove not only interesting but useful. The utility of a knowledge of available sources is also obvious from a military standpoint, as a city which depends upon supplies collected and stored at a distance may upon occasion have to fall back upon local sources.

(A) **All Hallows or All Saints' Spring and Pipe.**

Source.—The Spring is situated in an orchard originally belonging to the Priory of S. James, known as Culwell Orchard, on the S.E. side of Kingsdown and Maudlin Street.

This dates back to the 13th century, as free use of the spring was granted to the parishioners of All Saints by the Prior and Proctor of S. James in the 14th century.

The approach to the spring-head is through manholes, one in front of the Moravian Chapel House, and another in front of No. 57 Maudlin Street. The descent through this manhole leads by winding steps into a passage cut in the solid rock and arched over. The passage soon divides, one branch leading to a spring at a point nearly under the new Nurses' Home on the S. side of Terrell Street, the other running for some distance to another spring.

From the springs the water is carried by old two-inch leaden pipes, here and there intercepted by receivers cut out of the natural rock and fitted with strainers; in its course the pipe runs under Maudlin Street, through the Moravian Chapel Burial Ground, past Black Friars, along one side of Lewins Mead, over S. John's Bridge, through Christmas Street, under S. John's Archway, up Broad Street, past the corner of the Council House, across Corn Street to the Norwich Insurance Offices where it discharges into a large tank. The original point of discharge was in front of the present Corn Exchange, but is now fixed near All Saints' Church door. A water rate was formerly charged for the use of this water, suppressed under the Bristol Water Co's. Act in 1846.

(B) Saint John's Spring and Pipe.

This is now the property of the Churchwardens of S. John the Baptist Church.

Source.—The supply is obtained from two springs, one on the N.E. side of Brandon Hill, the second at the top of Park Street. Both springs arise in the Millstone Grit.

The Priory of the Carmelites in S. Augustine's Parish was founded by Edward, Prince of Wales, son of Henry III., in 1267; and this supply appears to have been obtained and utilised by these Friars.

Subterranean passages, hewn out of the natural rock and arched over, lead to these springs; the entrance is now by a manhole with winding steps, opposite 58 Park Street. The passages are of varying size, from 4 to 6 feet in height. One leads to the N.E. side of Brandon Hill, where the spring rises in what appears to have been a quarry; the other and larger passage leads to a carefully made well about 50 yards from the top of Park Street. Here the chief spring has its source. The well is about 10 feet in diameter, and has raised stone seats round it. From these springs the water is conveyed in old two-inch leaden pipes, interrupted at various points in Park Street by leaden receivers or dipping holes, passes under houses in Park Street, Culver Street, through Wells Street, turns almost at a right angle under the playground of S. Augustine's Schools, through Crabwell Court, along the S.E. side of Frogmore Street, through Pipe Lane, across Colston Street, to the storage tank in S. Augustine's Priory, S. Augustine's Back (Host Street), now in the occupation of the Tramway Company: this was the original termination of the pipe.

Later the right was granted by the Prior to the Churchwardens of S. John the Baptist Church to lay in

a feather (or branch) pipe from this storage tank, leading through Christmas Street along Nelson Street to a tank near one end of S. John's Church. This Church forms part of the old city walls, and the tower is situated over a pointed gateway. The pipe originally terminated within the gateway, near the present S.W. entrance to the church; but the present tap is situated in Nelson Street on the outer side of the walls.

The supply is abundant and of good quality, though exposed in its course to many possibilities of pollution; it is used by the shipping, and forms an available supply to many business premises.

After the water famine of 1864, the then Local Board of Health restored this fountain for the public service.

(C) Redcliff Spring and Pipe.

Source.—The spring is situated near Gay's Farm and Gay's Cottages, Knowle, and belongs to the Churchwardens of Redcliff Church. It was originally the property of Lord Robert de Berkeley, who in 1207 granted to the Churchwardens the free use of this water for the parishioners. The spring rises in the Blue Lias, about 16 feet below the surface, and is approached by a manhole. It is conveyed by a large stone conduit to a reservoir near the cottages, thence it was originally conveyed in leaden pipes (now mostly replaced by iron pipes) through Victoria Park, under the Railway, down Spring Street, York Road (New Cut), over Bedminster Bridge, up Redcliff Hill to a tank at the corner of Colston Parade near the entrance to the Church. S. John's Hospital now Camden Terrace, Guinea Street, was originally supplied from this source by a one-inch lead "feather" pipe.

Many bequests were formerly left for the maintenance of this supply, which is now somewhat endangered as to

quantity and quality by extension of building, sewerage works, etc.; but, with care, might be made readily available in an emergency. An annual pilgrimage to the source and over the route of this supply used formerly to end in a "Pipe Dinner," at which other beverages also were consumed.

(D) **S. Thomas's Pipe.**

This pipe receives its supply from the tank at Redcliff. It was granted to S. Thomas's Churchwardens in the 15th century on payment of an annual tax of twelve pence.

A two-inch lead pipe was carried from the tank along Thomas Street, extended later to a tap in Church Lane, now closed. Originally the supply was delivered in the middle of the street, under a canopy or "faire castellette."

The supply was arranged so as not to interfere with that already granted to S. John's Hospital, the pipe being inserted above that supplying S. John's, so that in dry weather it failed, and the parishioners of S. John's then had permission to draw direct from Redcliff pipe.

(E) **Jacobs Wells.**

Source. There are two springs within a short distance of one another on the N.E. side of Jacobs Wells.

These springs were used in the 14th century by the monks of S. Augustine's Church, now the Cathedral, probably about the time of Edward III. Mention is made of a visit in 1320 paid by the Bishop of Worcester to Woodwells Lake, an overflow from these springs situated near the present Woodwells Crescent.

The springs rise in the Millstone grit, and must have originally furnished an abundant and pure supply, but have become liable through building extension and sewerage works to the chance of pollution.

One of these springs, situated at the corner of Gorse Lane opposite the City School, is the property of the Dean and Chapter. From this spring the water was originally conveyed in an open conduit to a reservoir in the middle of the road opposite the present Police Station, from which point lead pipes conveyed it to a tank near the Cathedral, supplying the houses in Trinity Street, Lower College Green, and the neighbourhood. In the 17th century the Bishop's Palace was converted into a malthouse, and the water used for brewing purposes. Nearly all these pipes have been quite destroyed by recent street improvements; and for some years this water has not been utilised as a domestic supply, but furnished the Jacobs Wells Baths with water.

The second spring, the property of the Corporation, is situated at the junction of Constitution Hill with Jacobs Wel's, under a blacksmith's workshop. The water was conveyed in leaden pipes down Jacobs Wells, along Woodwell Crescent and S. George's Road, crossing the road near the Turkish Baths, through College Place, along College Green to a tank at the corner of Unity Street. This supplied many of the houses in College Green, also the old Grammar School and old Gaunt's Hospital. At the present time it is out of use as a domestic supply, and helps to furnish water for the Jacobs Wells Baths.

(F) **The Boiling Wells or Quay Pipe.**

A double spring issues through the red sandstone near Ashley Hill Railway Station under considerable pressure—hence the name “Boiling Wells.”

First utilised in the 14th century, it passed into the hands of the Corporation in the 16th century.

A conduit house receives the spring water, whence it is conducted in 3 in. pipes—originally lead, but now chiefly of iron, along the north bank of the mill stream to a point near Lower Ashley House, where it runs under the bed of the brook and beneath some houses to the site of a second conduit house (now pulled down, at the corner of Gordon Road and Jubilee Place (Baptist Mills). From this point it runs under Lower Ashley Road, beneath more houses, along Newfoundland Road, Milk Street, the Horsefair, over old Bridewell Bridge—(a branch here supplied the Bridewell Prison)—to the south side of Nelson Street. It now crosses the road, flanking St. John's Church, through Quay Street, to a cistern at the corner of Broad Quay and Stephen Street.

In 1864, when there was great shortness of water, a special grant was given to the Bristol Waterworks Company to make use of the Boiling Well Spring to supply the district of Montpelier. The pumping station is still in existence near the spring. For some years after this the Water Company once in each year pumped water into their main from this source, a procedure now abandoned. About this time also the Corporation fixed pumps in various parts of the City, which have in recent years been removed.

Some years ago a new 3 in. water main was laid in from this spring to the United Brewery Co.'s premises in St. Paul.

The water is hard, but otherwise of good quality. The site is now closely surrounded by buildings.

(G) Temple Conduit, or Ravenswell and Pipe.

This spring, originally belonging to Sir John de Gourney, Lord of Knowle, who in 1566 granted its use to a Priory near Temple Gate, whence it was afterwards conducted to a tank near Temple Church Tower. It is now the property of the Churchwardens of Temple

Church. The water supplied the Neptune fountain, when it stood in the Temple Church grounds.

The spring rises through the lias formation at Pylle Hill, Totterdown, and is approached by manholes which lead to tunnels, one by the side of the river, the other at a point near the Three Lamps, where Bath Road and Wells Road meet.

The conduit is partly of stone, earthenware, iron and lead pipes, which pass beneath the Pylle Hill houses, under Wells Road, to a tank near the Three Lamps; thence through the G.W. Engine Sheds, under the railway, through Messrs. Hare's premises, over Bath Bridge, along Victoria Street, crossing over to Temple Gate; along Temple Street, again crossing Victoria Street to a tank at Temple Church.

(H) St. Nicholas Pipe.

A tap formerly existed at the N.W. Corner of Old Bristol Bridge, supplied by water through lead pipes from a spring situated at the corner of All Saints' Lane and Nicholas Street. This tap was removed in 1762, when the old bridge, its pile of houses, and Old St. Nicholas Church and Gate were taken down. The spring, however, was still connected to a pump, known as St. Nicholas Pump, abolished some 40 years ago. The water was formerly much used by shipping.

Other Private Supplies.

Pithay Pump, Wine Street Pump, Old Market Street Pump, St. Nicholas Pump, Lewin's Mead Pump, Redcliff Hill Pump, and others of minor importance.

HOTWELL SPRING belonging to the Merchant Venturers, rises between high and low water. Curative

properties became known in 16th century ; Pump-room made, Colonnade built. Resembles in composition hot springs at Bath.

ZION SPRING.—Situated next door to the Clifton Rocks Hotel, Zion Hill ; of great depth ; said to be carried down to depth of Hotwell spring.

MOTHER OR GAMMER PUGSLEY'S WELL.—Situated on the North side of Kingsdown under Wellspring Villa and Spring Villa, 6 and 7, Sydenham Road, Cotham, in the red sandstone ; supposed to be good for the eyes. Bristolians here washed their one eye, which they kept open when they slept, in one stone basin, and drank out of the other. Legend :—Founded by a lady, made wife and widow in a day, during Cromwell's siege of the City, in a redoubt hereabouts. Mr. John Mills wished to restore this well to the public, but was defeated by the ground landlord.

RICHMOND SPRING.—Situated at the rear of Richmond Spring Hotel, Gordon Road, Clifton : a deep well, formerly in repute for eyes and wounds.

VICTORIA STREET WELL.—Situated in rear of Messrs. Cowlin & Sons, Victoria Street, Clifton, is carried to a point below bed of river (300 feet). Water abundant.

ST. PETER'S PUMP AND WELL.—Formerly under a Castellette at corner of Peter Street and Dolphin Street, constructed by Spencer, executor of Canynge and Mayor, in 1474 ; in red sandstone formation. In 1586 Ralph Dole left 20s. per annum for its repair ; paid by the Churchwardens to the Corporation.

EARLY WATERWORKS.—1696 : Royal assent ; supply at Hanham Mills, conveyed to Crew's Hole. Pumped

by primitive engine to tank on Lawrence Hill, thence to the City by wooden pipes (elm); specimen at Stratton Street yard. Cost £7,000. Abolished in 1700.

SOCIETY OF MERCHANT VENTURERS' WORKS.—Early in 1800 this Society established Waterworks for their property, from a spring near Bridge Valley Road. Pumped to a reservoir near the Observatory, now a disused quarry. Mains and works were taken over by the Waterworks Company in 1846.

[The enquiries in connection with this matter were entrusted to Supt. Inspector Lowther, to whose diligence and interest in the matter I am much indebted.—D.S.D.]

Sewerage, Drainage, Scavenging, etc.

All these matters are reported upon annually by the City Engineer to the Sanitary Committee, and the Report is published.

Parks and Open Spaces.

The Parks and Open Spaces available for the recreation of the people comprise in all 800 acres, including Clifton and Durdham Downs, which have a combined area of 442 acres.

Of the 800 acres, 358 are laid out as parks, gardens, or playgrounds; but the public has the right to wander over about 603 acres. Wicket pitches are allowed on Durdham Down and in five of the Parks, where also Bowling Greens, Tennis Courts and Quoit Grounds have been laid out. In two parks lakes are provided with boats. The net annual cost of the Parks and Open Spaces is about £7,600

Medical Inspection in Public Elementary Schools.

The number of children attending the Board Schools in September, 1897, before the extension of the City, was 18,077, and attending other schools was 21,868; or a total of 39,945. In 1898 the City was enlarged, a further enlargement took place in 1904, and by the 1st January, 1913, the total number of scholars on the registers of the schools controlled by the Education Committee was 59,848.

		No. of Schools.	No. of Children on Registers
Council Schools	...	43	39,312
Church of Edgland Schools	...	42	17,669
Wesleyan School	...	1	675
Roman Catholic Schools	...	5	1,530
Schools for Mentally and Physically Defective	...	3	413
Industrial Schools	...	2	174
Deaf Institution	...	1	53
Semi-deaf Class	...	1	22
		98	59,848

Since 1905 the Education Committee have excluded children under five years of age from certain schools.

In some of the poorer districts, however, children under five are admitted.

The number of children under eight years of age on the registers of the Public Elementary Schools on 31st January, 1913, was 22,067, and of that number 3,746 were under five years of age.

Medical inspection of school children, for strictly limited purposes, has been provided by the Education Committee, under the Education (Administrative Provisions) Act, 1907, independently of the Health Committee.

The City has been divided into five districts, to each of which a part-time Medical Officer, in general practice, has been appointed, who devotes three school half-days, of two and a half hours each, per week to the work. In 1910 Dr. Green was appointed School Medical Officer.

The work was commenced on September 1st, 1908, the first month being utilised in a general survey, to discover cases of under-feeding in some of the poorest districts, in view of the scheme for providing meals since adopted by the Committee.

Two whole-time School Health Visitors or Nurses have been appointed, each taking one of the two school groups into which the schools in the City have been divided. These Nurses are chiefly engaged, under medical instructions, in attending to dirty heads, discharging ears, and general conditions of cleanliness; they also visit the homes, and advise the parents.

The School Medical Officer now makes a detailed examination of the hygienic condition of the schools.

The School Medical Officer issues a separate report.

Co-relation of the School Medical Service with the Public Health Service.

In 1905, as there were then no School Medical Officers, and it was desirable that the Teachers should co-operate with the Health Department in dealing with the communicable diseases in schools, the Education Committee adopted certain Regulations under which the Head Teacher has to forward a card to the Medical Officer of Health, giving notice of any case of known or suspected sickness in the school. These regulations were especially designed to secure early information as to Measles, Whooping Cough, Chicken-pox, German Measles, or Mumps, which, as they are not notified by Medical Practitioners, may readily escape notice, though they form a considerable proportion of school illness.

Upon receipt of the cards from the Head Teachers, general inquiries are made at the affected houses by the District Inspectors, and precautionary notices left. The card is returned to the school with the provisional date for return marked upon it.

The Education Committee were advised to adopt these Regulations in 1905, not as a satisfactory solution of the question of dealing with communicable disease in schools, but as a temporary expedient until Medical Officers of schools were appointed.

Up to the present, Measles epidemics, which recur periodically, have not been satisfactorily controlled, as it has been found to be impracticable, without being in daily Medical touch with the schools, to detect the very earliest cases; and, if these are missed, subsequent control is impossible. The best of Teachers are generally a few days too late in detecting the early Measles cases, and it is just these few days that matter. In the most recent Education Code, the power of voluntary school closure or exclusion of particular scholars is definitely given to the

School Medical Officer, with whose duties in this respect the Medical Officer of Health cannot interfere, except through the Health Committee; and the control of Measles must be initiated at the schools, and, if it is to be effectual, by the School Medical Officer.

In the case of Diphtheria or Scarlet Fever in schools, as with Measles, the duties of the Medical Officer of Health and of the School Medical Officer meet, but it is not quite clear, as yet, how they blend.

Before the appointment of School Medical Officers, it became necessary, upon the outbreak of Diphtheria in a school, to secure special medical assistance in order to make an individual examination of whole classes, or of whole schools; this assistance was provided by the Health Committee, as there were no Medical Officers, but the work would seem to be essentially a work of school medical inspection.

At present the School Medical Inspecting Staff is not strong enough to undertake the heavy strain of such epidemic work; and the Health Department has no means of doing it except by the provision of special medical assistance; it cannot be effectually done first by one at the inception of an outbreak, and then, upon its wide extension, by the other, for such divided counsels would, perhaps, result in trouble. It would be well to clearly understand what is, in the opinion of the Central Education Authority, the proper adjustment of the duties of the Education and Health Authorities in regard to epidemic disease amongst scholars in school, and this does not appear to be made much clearer by the Memorandum on Closure of and Exclusion from School, published in 1909.

Meanwhile the Health Committee continue the action taken before the appointment of School Medical Officers.

The following table shows the number of cases of non-notifiable diseases forwarded to the Medical Officer of Health.

1912.

	1st Quarter ending March 30.	2nd Quarter ending June 20.	3rd Quarter ending Sept. 28.	4th Quarter ending Dec. 28.	Total
Measles	693	704	73	288	1,758
Chicken-pox ...	318	186	93	198	795
Whooping Cough...	107	202	114	176	599
Mumps	68	48	24	61	201
Suspicious Throats & Rashes, etc.	2	25	18	11	56
	1,188	1,165	322	734	3,409

The following Table shows the number of cases of Non-notifiable diseases reported to the Medical Officer of Health from the various Schools:—

Schools.	Measles.	Whooping Cough.	Chicken Pox.	Mumps.	Rashes, Throats, etc.
Air Balloon Hill, (C.)	19	9	3	...	...
Alexandra Park, (C.)	9	1	...	...	...
Anglesea, (C.)	3	2	...	2	...
Ashley Down, (C.)	1	42	7	3	1
Ashton Gate, (C.)	41	1	5	9	2
Avonmouth, (V.) ... ..	...	1	2	...	...
Avon Vale, (C.)	10	4	11	3	...
Baptist Mills, (C.)	21	8	23	1	...
Barleyfields, (C.)	20	9	6	...	...
Barnard Place, (V.)	7	...	1	...	...
Barton Hill, (C.)	3	5	4	1	...
Bedminster Bridge, (C.)	30	...	9	...	...
Bedminster Down, (C.)	16	4	15	...	...
Bedminster National, (V.)	29	11	2	1	...
Berkeley Place, (V.), Jacobs Wells	18	2	9	...	...
Bishop Road, (C.)	55	17	3	...	...
Castle, (C.)	28	7	8	2	2
Chester Park, (C.)	26	...	6	...	...
Christ Church, (V.)	3	8	16	...	...
Clifton National, Clifton Wood	39	...	17	...	...
Day Industrial, Temple Backs	...	...	6	...	...
Easton, (C.)	18	6	12	1	...
Easton Road, (C.)	6	...	6	1	...
Eastville Boys', (C.)	2	...	2	4	4
Eastville Girls' and Infants'	38	10	37	5	...
Carried forward	442	147	210	33	9

Schools.	Measles.	Whooping Cough.	Chicken Pox.	Mumps.	Rashes, Throats, etc.
Brought forward ...	442	147	210	33	9
Emmanuel, (V.), Louisa Street ...	13	6	12	...	...
Fishponds College Practising School (Girls) ...	1	1	...	1	...
Fishponds College Practising School (Infants) ...	47	6	1	1	...
Greenbank, (C.) ...	25	4	54	...	1
Hannah More, (V.) ...	24	7	6	1	1
Holy Cross, R.C., (V.) ...	5	...	...	...	...
Holy Trinity, (V.), Hotwells ...	11	5	3	...	...
Horfield, (V.) ...	2	11	...	...	1
Hotwells, (C.), Hope Chapel Hill ...	7	15	2	...	...
Hotwells National, (V.) ...	14	9	...	...	2
Kingsdown, (C.) ...	59	9	9	5	1
Knowle, (C.) ...	43	22	31	3	...
Luckwell, (C.) ...	61	12	34	10	14
Marlborough Hill, (V.) ...	5	2	8	...	...
Merrywood, (C.) ...	34	...	7	1	...
Mina Road, (C.) ...	10	...	5	1	...
Moorfields, (C.) ...	...	...	4	1	...
Newfoundland Road, (C.) ...	12	...	4	...	...
North Street Wesleyan, (V.) ...	16	4	6	9	...
Orchard Place, Stillhouse Lane ...	...	...	2	...	...
Park Place, R.C., (V.) ...	7	4	2	...	...
Parson Street, (C.) ...	9	7	2	3	...
Redcross Street, (C.) ...	3	...	1	...	...
Redcliff Endowed, Boys, (V.) ...	1	...	...	3	2
Redfield, (C.) ...	39	11	17	5	...
Carried forward ...	890	1282	420	77	31

Schools.		Measles.	Whooping Cough.	Chicken Pox.	Mumps.	Rashes, Throats, etc.
Brought forward	...	890	282	420	77	31
Rose Green, (C.) ...	...	11	..	...	1	...
Russell Town, (C.) ...	...	17	9	32	1	...
St. Anne's, (C.) ...	...	53	9	12	33	...
St. Augustine's (V.), Wells Street...	...	4	19	4	...	...
St. Barnabas, (V) ...	..	15	13	15	4	2
St. Gabriel's, (V.), Easton	...	...	2	1	1	...
St. George National (V.) ...	...	7	...	...	...	...
St. George's, (V.), Brandon Hill	...	1	26	1	...	...
St. James, (V.), St. James' Barton...	...	8	17	6	2	...
St. John's, (V), Durdham Down	...	4	2	5	...	...
St. Jude's, (V.) ...	...	21	11	2	...	...
St. Luke's, (V.), Barton Hill	...	2	11	...	8	...
St. Luke's. (V.). Weare Street	...	...	...	...	8	...
St. Luke's Institute, (V.), William Street	...	33	3	5	1	...
St. Mark's, (V.), Eaaton	...	7	7	18	2	1
St. Mary Redcliffe, Girls' and Infants', (V.)	...	13	6	9	2	3
St. Mary-on-Quay, R.C., (V.)	...	11	...	7	...	...
St. Matthias, (V.), Broad Weir	...	3	3	6	2	...
St. Michael's, (V), Old Park	...	19	6	9	1	...
St. Nicholas, R C., (V.) ...	...	3	...	...	...	...
St. Nicholas & St. Leonard's, (V.)..	...	...	...	6	...	...
St. Paul's, (V.), Dean Lane	...	37	...	1	...	...
St. Philip's, (C.) Freestone Road	..	24	12	16	5	2
St. Philip's Church, (V.) ...	...	40	17	5	7	5
Carried forward	..	1,223	445	580	155	44

Schools.	Measles.	Whooping Cough.	Chicken Pox.	Mumps.	Rashes, Throats, etc.
Brought forward ...	1223	445	580	155	44
St. Saviour's, (V.), Woolcott Park...	23	10	15	...	...
St. Silas, (V.), St. Philip's Marsh ...	12	2	...	5	...
St. Simon's, (V.), Baptist Mills ..	6	12	18	4	...
Sefton Park, (C.), ...	76	7	43	4	2
Shirehampton, (V.) ...	25	2	...	19	2
South Street, (C.) ...	43	12	8	3	1
Stapleton, (V.) ...	7	...	...	...	.
Summerhill, (C.) ...	49	16	2	2	1
Sussex Street (C.) ...	11	5	2	1	...
Temple Colston, (V.), Temple ...	2	1	...	...	...
Two Mile Hill, (C.) ...	67	58	6	2	...
Victoria Park, (C.), St John's Lane	34	6	42	...	1
Wells Road, (C.) ...	6	4	44	1	5
Westbury-on-Trym, (V.) ...	1	...	3	...	...
Westbury Park, (C.) ...	30	6	3	...	...
Whitehall, (C.) ...	...	9	6	..	...
Wick Road, (C.) ...	61	...	6	3	...
Windmill Hill, (C.) ...	82	4	17	2	...
TOTALS ...	1758	599	795	201	56

Note.—Forty-six cases of Ringworm were also reported from various Schools.

GRAND TOTALS.

Measles ...	1758
Whooping Cough ...	599
Chicken Pox ..	795
Mumps ..	201
Rashes, Throats, etc. ...	56
Ringworm ...	46

3455

No returns of any of these diseases have been received from the following schools during the year 1912 :—

Dr Bell's, Fishponds Road
 St. George (C.)
 St. Paul's, (V.) Portland Square
 Stoke Bishop (V.)

THE MIDWIVES' ACT, 1902.

The administration of the above Act, which had previously been in the hands of the Watch Committee, was transferred to the Health Committee by resolution of the Council on 3rd October, 1911. The work, however, continued to be carried out by the Divisional Police Surgeons until 11th April, 1912.

Soon after, two Health Visitors were appointed, and the preliminary organization and visiting under the Midwives' Act was taken in hand. This, and assistance in the work of the Tuberculosis Dispensary on Redcliffe Parade, occupied their time until we were prepared to commence work also under the Notification of Births Act.

Both Health Visitors were withdrawn from the Tuberculosis work, and commenced regular work under the Health Committee on 17th October, under my supervision. This report is, therefore, chiefly concerned with the events of the last three months of the year. All midwives practising in the City were inspected at least twice between May and December 31st, involving 184 visits. Seventy-one midwives had notified intention to practise in the City during 1912. Of these ten are attached to Nursing Homes or Institutions, and 61 are in private practice; only one of these lives outside the City boundary.

The following table gives the qualifications of these midwives:—

Central Midwives Board	...	16	} 33
London Obstetrical Society	...	13	
Glasgow Maternity Hospital	...	1	
Liverpool Lying-in Hospital	...	1	
City of London Lying-in Hospital	...	1	
Coombe Hospital	...	1	
In practice prior to July, 1901	...	38	
			71

During the year one midwife died, and one midwife voluntarily surrendered her certificate to the Central Midwives' Board and retired from practice on the ground of advancing age. Seven midwives decided, for various reasons, to relinquish practice, but their names remain on the Midwives' Roll. They have virtually retired. Three changes of address were notified under Rule E. 21 (2).

In October, 1912, when the Notification of Births Act, 1907, commenced to be administered, a copy of the Central Midwives Board's Rules and a memorandum on the C. M. B.'s Revision of Rules (1911), books of the various forms required to be used by midwives, and a Notification Book, for use under the Births Act, were forwarded to each of the 71 midwives who had registered themselves for the year.

Out of a total of 1,191 births notified, 824 (69 per cent.) were notified by midwives. Of these, 36 were stillbirths. All midwives' cases are visited, as far as is possible with an insufficient staff. Stillbirths are not at present being visited.

Tab'le showing the months of pregnancy during which stillbirths took place :—

6 months.	7 months.	8 months.	9 months.	Not Specified.	Total.
2	5	5	11	13	36

Medical help was obtained by midwives on forty-six occasions since october, for the following reasons :—

Abnormal Presentation ...	...	3
Contracted Pelvis ...	...	2
Obstructed labour, Instrumental assistance, uterine inertia, &c. ...	...	9
Adherent or Retained Placenta, or Membrane ...	...	4

Placenta Prævia	...	...	1
Hæmorrhage	...	...	2
Ruptured Perinæum	...	...	5
Pyrexia	...	...	2
Bronchitis	...	...	2
Pleurisy	...	...	1
Ophthalmia	...	...	2
Inflamed Eyes	...	...	2
Weak Eyes	...	...	1
Convulsions (child)	...	...	1
Various and not definitely stated...			9
			<hr/> 46

Three deaths from non-infectious disease were notified on Form B by Midwives.

Two notices on Form D of having laid out dead body were received.

PUERPERAL FEVER.

During the whole year there were 33 cases notified, of which 22 were in women attended by medical men, and 11 in those attended by midwives. Each midwife concerned had a disinfecting bath at the Central Disinfecting Station, under supervision of the Ambulance Nurse : their clothes and instruments were also dealt with, and new instruments supplied where considered necessary.

PRACTICE BY UNCERTIFIED WOMEN.

Enquiries were made into seven cases where apparently uncertified women were acting as midwives.

In three instances the women were acting as nurses under doctors. They were cautioned not to take cases on their own account as midwives.

In two cases the women had practised in the earlier part of 1912. They were cautioned.

In another instance a woman, who in October, 1910, had been prosecuted for practising as a midwife, she not

being certified under the Act, and bound over to come up for judgment within twelve months, was found to have attended a confinement for an arranged fee in November, 1912. The case was reported to the supervising authority, but the evidence, in the opinion of the Town Clerk, was not sufficient to secure conviction.

An uncertified woman was reported as attending cases, making no specific charge, but accepting what was given her. The circumstances were reported to the Central Midwives' Board, who were asked whether, in their opinion, if this were done habitually, it constituted practising for gain. The reply was in the affirmative, the case was reported to the supervising authority, who referred it to the Town Clerk. No decision as to action has yet been arrived at.

CHARGES AGAINST CERTIFIED MIDWIVES.

A charge of disposing of the dead body of an infant in September, 1912, with a view to prevent an inquest by the Coroner, was brought against a midwife by the police. She was stated to have taken the body promising to bury it, and receiving money to pay certain fees: she, however, burnt the body. The verdict was "Not guilty." The full circumstances of the case were laid before the Central Midwives' Board, who decided that, although the midwife was found "Not guilty" by the jury, it appeared to be a case which should receive the consideration of the Board, and asked whether—

"the local supervising authority for the City of Bristol find a *prima facie* case of malpractice, negligence, or misconduct within the meaning of Section 8 (2) of the Midwives' Act, 1902, to be established."

The Local Supervising Authority considered a *prima facie* case made out, and the Town Clerk informed the

Central Midwives' Board, who, after further considering the case, censured and cautioned the Midwife, but did not remove her name from the Roll; a decision which certainly did not err on the side of severity.

A charge of being under the influence of alcohol while in attendance on a case and also of neglecting the patient was made against another Midwife. I saw her personally and cautioned her, pointing out that she had contravened Rule **II** of The Central Midwives' Board. I also cautioned her with regard to alcoholic liquors. This Midwife's name was subsequently struck off the Roll for repetition of the offence.

SUSPENSIONS BY SUPERVISING AUTHORITY.

None were found necessary.

The administration of the Act has been in the hands of the Health Committee such a short time, and organised work under it is so recent, that it is difficult to gauge any change in the conditions under which midwifery work is carried on.

When regular inspection of the midwives was first commenced in May, it was found that the Central Midwives Board's Rules as to equipment, dress, etc., were more honoured in the breach than the observance, except in a few instances. The two following inspections revealed a somewhat more satisfactory condition, and it was evident that attempts had been made towards compliance with the Rules, though there was still room for much improvement in many cases.

There has also been considerable difficulty in securing transmission of the various Notices (sending for Medical Help, Stillbirth, etc.) required by the Rules.

Many of the Midwives at first appeared to resent inspection, and were evidently unaccustomed to send in

notices, apparently having little knowledge of the Rules, or considering that they might be safely neglected. Towards the end of the year, however, a more satisfactory understanding of the relations between the Supervising Authority and its Officers and the Midwives was apparent, and I trust as time goes on any trace of friction or annoyance will disappear. The object of the Act is to secure a betterment of the conditions under which the women attended by midwives are confined, and to prevent, as far as possible, any avoidable risk to the lives of mother and child: the Rules are framed with that intention; and it is the duty of the midwives, if they wish to do the best for their patients, to carry them out.

The Local Supervising Authority is responsible to the Central Midwives' Board, and it is their duty to see that the Rules are complied with. If they find a Rule has been broken they must call the midwife's attention to the matter, and if she receives a remonstrance she has really only herself to blame.

JOHN C. HEAVEN, M.R.C.S., L.R.C.P., D.P.H.,
Acting Medical Inspector of Midwives.

NOTIFICATION OF BIRTHS ACT, 1907.

The Act provides :—

(1). In the case of every child born in an area in which the Act is adopted it is the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after, the birth, to give notice in writing of the birth to the Medical Officer of Health of the district in which the child is born, in manner provided by this section.

(2). The notice shall be given by posting a prepaid letter or postcard addressed to the Medical Officer of Health at his office, giving the necessary information of the birth within thirty-six hours after the birth, or by delivering a written notice of the birth at the office of the Medical Officer within the same time.

(3). Any person who fails to give notice of a birth in accordance with the Act will be liable on summary conviction to a penalty not exceeding twenty shillings, but a person will not be liable to a penalty under this provision if he satisfies the court that he had reasonable grounds to believe that notice had been duly given by some other person.

(4). The notification required to be made under the Act is in addition to, and not in substitution for, the requirements of any Act relating to the registration of births.

(5). The Act applies to any child which has issued forth from its mother after the expiration of the twenty-eighth week of pregnancy, whether alive or dead.

Adopted by Council :—12th December, 1911.

Sanctioned by Local Government Board :—16th February, 1912.

Administration commenced :—17th October, 1912.

Every medical man in the City was asked whether he desired a Notification book and one was supplied to every practitioner replying in the affirmative. All practising midwives were also supplied with books.

The Births notified to end of year were 1191, including 55 Stillbirths (623 males, 568 females, 24 sets of twins).

	Births	Stillbirths	Total
Notified by Doctors ...	202	17	219
„ „ Fathers, etc...	146	2	148
„ „ Midwives ...	788	36	824
Totals ...	1136	55	1191

Number of Primiparæ cases 103.

CASES VISITED.

Once.	Twice.	Three Times.	Total Cases Visited.	Total No. of Visits.
597	137	7	741	892

In 9 instances objection was raised by parents to visitation by Health Visitor; in 20 it was considered undesirable for Health Visitor to call, and in 128 a visit, though desirable, was not possible owing to insufficient staff.

Particulars not obtained	...	29
Full-time Babies	...	669
Premature	...	43
Born Healthy	...	666
Born Weakly	...	46

Method of Feeding—

Breast Fed	...	664
Partially Breast Fed	...	16
Bottle Fed	...	30
Spoon Fed	...	2
Tube Bottles in use...	...	28
Boat-shaped Bottles in use	...	18

Weighed in :—	Number Weighed.	Highest Weight.	Average Weight.
1st Week	449	12½ lbs.	7.87 lbs.
2nd Week	50	11 lbs.	7.22 lbs.
3rd Week	24	11¾ lbs.	9.33 lbs.

Number weighed 523, including 498 full-time children. In 57 instances mothers objected to having their babies weighed, considering it unlucky.

Ailments from which Health Visitors found babies suffering :—

Weak and Discharging Eyes	...	60 (see p. 143)
Thrush	...	12
Red Gum	...	11
Bronchitis	...	9
Diarrhoea and Vomiting	...	1
Umbilicus Inflamed	...	1
Eczema	...	3
Snuffles	...	2
Spina Bifida...	...	2
Jaundice	...	1
Hydrocephalus	...	1
Cyanosis (marked)	...	1

Defects and Injury at Birth noted :—

Tongue-tied	...	5
Cleft Palate	...	1
Webbed Feet	...	1
Injury at Birth	...	2

Sixteen cases were referred to the Chief Inspector of Nuisances for investigation :—

	References	Remedied	No action
Overcrowding ...	12	3	9
Fixed Windows ...	3	2	1
Dilapidations ...	1	1	—

The administration of this Act commenced on 17th October; therefore this report only deals with figures, &c., for about three months.

Only 1,191 of the 1868 births registered during October, November, and December were notified, but, as the provisions of the Act become more widely known, this

proportion will probably greatly increase, and the amount of visiting required will be even further in excess of what is possible than it is now.

It has been difficult to determine the best method of working, and our efforts have, up to the end of the year been largely experimental, and subject to alteration, as experience dictated. It quickly became evident that the staff of two Health Visitors is quite inadequate to deal with the work required. The intention was that a visit should be paid to every case notified by a midwife, and to other cases where a doctor reported visiting desirable, and in those notified by relatives when it seemed necessary.

The Health Visitor, on calling, collects certain information with regard to the case, gives advice on matters where it seems called for, and leaves a card of instructions as to infant feeding and management. The number of instruction cards left was 689. Further instructions as to artificial feeding when that is necessary can be obtained on application to this department. It is satisfactory to note that, of the 712 cases, in which particulars were obtained, the child was entirely breast-fed in 664 cases, as compared with 46 infants wholly or partially bottle-fed. That abomination, the tube-bottle, however, exceeded the boat-bottles used by 10. It would be an excellent thing if the example of certain other countries, in prohibiting the use of tube bottles, were followed by England, and it would be an added benefit to include in the prohibition the almost universal "comforter" or "dummy," the ill effects produced by which are very great.

The proportion of breast to bottle-fed infants is high, and may be due to the fact that the information was obtained shortly after birth. If it had been possible to follow the cases up, it would very likely have been found

that the breast was discontinued for the bottle earlier than it should be, and this is one direction in which ability (dependent on sufficient staff) to keep cases under observation is desirable, because the mortality in breast-fed infants is very much less than among the bottle-fed.

The rule for visiting at present is—

Midwives' Cases	...	...	...	3rd day.
Institution „	...	...	...	10th „
Doctors' cases (only on special request)				14th „

As previously stated, there were, however, no less than 128 cases in the three months to which no visit could be paid within three weeks, although it was desirable and ought to have been made.

The total number of visits made (892) gives an average of over six per day to each Health Visitor ; and, considering the distances they have to cover, the amount of time necessarily spent at each house, and that they supervise the midwives as well, the amount of work got through was very great.

It is doubtful, however, whether the work was productive of much good. A single visit is of little value. Mothers should be kept under observation, and advice be tactfully given from time to time, as required, and it often means the expenditure of twenty to thirty minutes to gain the confidence of patients, and induce them to look upon the Visitor as a friend and not an inquisitor. It was found impossible to keep in touch with old cases and visit the new ones, and re-visits, save in exceptional circumstances, had to be abandoned. With an adequate staff, the minimum number of visits to be aimed at would be :—

Weekly for first month
Once in 3rd month
Once in 6th „
Once in 9th „
Once in 12th „

I am of opinion that, unless an adequate staff is provided, little advantage will be derived by the City from this Act, and what is being done at present is almost an entire waste of time and energy. It is disheartening, too, for the staff to work under such conditions, realising that the work cannot be followed up as it should be.

I consider that, to work the Act at all efficiently, the staff should consist of:—

Medical Head.

2 Superintendent Health Visitors

6 District Health Visitors

This conclusion has been arrived at after careful consideration. If any less staff is provided, it will be necessary to furnish them with special means of locomotion if they are to be in any reasonable position to cope with the work.

There are existing in the City a number of agencies concerned with the provision of help and advice to lying-in women and mothers. The School for Mothers in Broad Plain, which is doing very good work, kindly consented to assist us by visiting lying-in women, in the area dealt with by them, whose names were sent to the Secretary for that purpose, and the Health Visitors also leave one of the School's Leaflets in cases where they consider it may be useful. Towards the end of the year similar action was arranged for with the University Settlement, Barton Hill. Sixty-nine cases (23 Primiparæ and 46 mothers who appeared to need instruction) were referred to these schools up to the end of the year, and in several instances the mothers have joined the school. The majority, however, although expressing a wish to do so, stated they were unable, owing to various reasons—such as having so many children to look after (8 in some cases), or having to go to work themselves. Thanks are due to these Schools for their assistance.

A few necessitous cases (8) were referred to the Bristol Civic League for assistance ; this was granted to two.

There is no doubt much need for instruction, both to prospective and actual mothers, and such Associations as the Schools for Mothers are worthy of all possible encouragement and assistance. They are already doing excellent work, which, if extended, cannot fail to benefit the coming race.

It seems to me, however, that there is a good deal of duplication of societies, and therefore waste of time and energy. I would venture to suggest to the various committees the advantage of amalgamation, or, at least, of arriving at a general co-ordinated working arrangement.

Ophthalmia Neonatorum.—It is not possible to form any reasonable estimate of the number of cases of this disease occurring. The severity of the 60 cases of eye affection noted varied very greatly from a simple “weakness” to marked “discharge”; but in only a very few cases did the affection appear to approach ophthalmia neonatorum. It was not possible to keep these cases under observation, but advice was given to the parents to call in a doctor, and this was done in many instances. There seems a reluctance on the part of midwives to advise sending for medical help in eye cases, which we are trying to overcome.

The importance of prompt and efficient attention to every case of eye trouble in the newly born child can hardly be over-estimated, if the fact be remembered that the great majority of the blind who have to be cared for in the Blind Institutions are sufferers from the effect of neglected inflammation of babies’ eyes. Yet the greater number of these cases would not have become blind if properly cared for at the time. It is for this reason that prompt information as to eye affection by midwives is

so desirable ; and the question of notification by doctors of cases occurring in their practice is one for careful consideration. It is, however, of little use to have cases notified unless prompt and efficient nursing and attendance can be supplied where necessary. I think your Committee might consider whether they will themselves undertake such nursing and attendance, and, if so, whether it is to be carried out by the Health Visitors or by special nurses. In this latter connection it might be well to approach the Governors of the Bristol Eye Hospital and Eye Institution as to nurses ; and it would also be a great advantage if a few beds could be provided for the reception of severe cases at, or in connection with, those Institutions. When the treatment of cases has been arranged for, the disease should be made notifiable ; but I see little use in doing so until treatment can be given.

In conclusion, I would like to point out that the scope for work under this Act is almost unlimited, and that so far we are only touching the fringe. Visiting and advising at home is by no means the end of what may be done. The questions of provision of crèches, or day nurseries for children of working mothers ; of a central school where lectures and demonstrations are given on the care of mothers, prospective or other, the proper upbringing of children, and all subjects having a bearing on the well-being of mother and child ; and many other points, all arise in connection with its working.

But first and foremost, if any real good is to be done, there must be sufficient workers ; and I again strongly advise the increase of Staff previously mentioned.

JOHN C. HEAVEN, D.P.H.,
Acting Medical Inspector of Midwives, etc.

Housing of Working Classes.

The following Table shows the action taken over a period of 20 years :—

Date.	No. of Houses dealt with.	No. of Houses closed.	No. of Houses made habitable.
1890	35	30	5
1891	72	27	45
1892	26	18	8
1893	2	0	2
1894	34	18	16
1895	31	18	13
1896	28	10	18
1897	4	3	1
1898	9	7	2
1899	33	31	2
1900	21	6	15
1901	6	1	5
1902	64	61	3
1903	67	58	9
1904	34	16	18
1905	28	11	17
1906	9	9	0
1907	18	15	3
1908	30	12	18
1909	17	9	8
Total ...	568	360	208

Housing, Town Planning, &c., Act.

Date.	No. of Houses Inspected.	No. of Houses Closed under Order.	No. of Houses Closed Voluntarily.	No. of Houses made Habitable.	No action necessary.
1910	611	18	55	235	209
1911	1351 and two rooms	72 and two rooms	38	794	332

The action taken under the provisions of this Act during 1912 is set forth here :—

Total number inspected ... 453

Found defective—

27 Closed under order.	}	—408
36 Closed voluntarily.		
315 Made habitable.		
30 in hand.		

No action necessary ... 45

Of the 63 houses closed, eleven were subsequently voluntarily demolished.

Mortuaries.

Quakers' Friars, off Merchant Street, *post mortem* Examination Room and Coroner's Court adjoining.

In addition to the above, there are Mortuaries for Police purposes at Bedminster and Redland Police Stations, and a Mortuary at Avonmouth.

Municipal Lodging House.

This Lodging House was opened on April 20th, 1905, with 60 beds, and continued with this number until the 17th September, 1905, the average number of lodgers per night during that period was 42. On the 17th September, 1905, the number of beds were increased to 120, and the average nightly occupations from that date to 25th March, 1906, was 74.

City and County of Bristol.

MUNICIPAL LODGING HOUSE.

City Accountant's Report and Financial Statement.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH
COMMITTEE.

Gentlemen,

In submitting to you the Financial Statement of the Municipal Lodging House, for the year ended 25th March, 1913, I beg to report as follows, viz :—

The total number of nightly occupations from 26th March, 1912, to 25th March, 1913, was 39,873, or an average of 109 lodgers per night during the year; the total number of beds available being 120.

For the year ended 25th March, 1912, the total number of nightly occupations was 34,398, or an average of 94 lodgers per night during the year. This is an increase of 5,475 nightly occupations, or an increase on the average of 15 lodgers per night.

The result of the increase in the number of lodgers has been a corresponding increase in the receipts over the previous year of £151 0s. 1d.

There has been a decrease in the working expenses as compared with the previous year of £71; and this is largely explained in the reduced charges for Water £16, Painting and Repairs £37, and Linen £40. There has, however, been an increase in the wages for the year of £19, as owing to the increased number of lodgers it was necessary to engage additional assistance. There is also a big reduction in the contribution to the Sinking Fund

of £77, which is due to the unexpended balance of the Capital Account being transferred to the Sinking Fund.

The net Surplus on the working expenses for the year ended 25th March, 1913, was £192 5s. 1d., as compared with a deficit of £27 10s. 9d. in the previous year.

The total amount chargeable on the Rates for the year 1912-1913 in respect of Interest on and Repayment of Loans, after taking into account the Surplus of £193 4s. 1d. on the Working Expenses, was £275 18s. 8d., as compared with £577 14s. 7d. for the year ended 25th March, 1912.

For the information of the Committee I append herewith the average amount received per night per occupation, and the average cost, viz.:—

Year 1911-12.		Year 1912-13.
d.		d.
5·42	Average amount received per nightly occupation.	5·59
5·62	Average cost per nightly occupation (maintenance only)	4·42
8·09	Do. (maintenance and interest on loans)	6·53
9·46	Do. (maintenance, interest on loan and contribution to Sinking Fund)	7·25

I am, Gentlemen,

Your obedient Servant,

J. CROMPTON,
City Accountant.

City Accountant's Office,
51 Prince Street,
1st May, 1913.

MUNICIPAL LODGING HOUSE.

EXPENDITURE.

Year				Year					
1911-12.				1912-13.					
£	s.	d.		£	s.	d.			
383	12	6	Wages	402	7	6			
66	5	1	Rates, Taxes and Insurance	66	5	1			
1	5	10	Workmen's Compensation and National Health Insurance	5	7	6			
25	7	3	Electric Light	26	10	1			
2	11	3	Gas	1	16	2			
53	14	0	Water	37	9	6			
42	12	1	Fuel	37	0	3			
67	17	5	Washing and Cleaning Materials	66	7	4			
10	0	4	Cleaning Windows and Chimneys	14	1	10			
5	11	9	Printing, Stationery and Advertising	8	4	4			
76	13	3	Painting and General Repairs	39	11	0			
15	6	11	Fittings, Lamps, Repairs, etc.	16	4	3			
51	16	10	Linen	11	9	0			
3	6	2	Sundries	2	6	1			
<hr/>				<hr/>					
806	0	8		734	19	11			
<hr/>				<hr/>					
£		s.	d.	LESS INCOME.		£		s.	d.
773	17	3	Cubicles	924	6	9			
1	2	9	Baths	19	7				
1	2	5	Parcels	1	4	11			
17	6		Fines	1	8	9			
<hr/>				<hr/>					
776	19	11		928	0	0			
778	9	11	1 10 0 Rent	5	0		928	5	0
<hr/>				<hr/>					
27	10	9	Deficiency on Ordinary Working	— — —					
<hr/>				<hr/>					
— — — Surplus Do.				193				5	1
354	3	4	Interest on Loans	350	1	11			
<hr/>				<hr/>					
196	0	6	Contribution to Sinking Fund for Redemption of Debt	119	1	10			
<hr/>				<hr/>					
550	3	10		469	3	9			
<hr/>				<hr/>					
£577	14	7	Total amount charged to General District Rate	£275	18	8			

AMBULANCE RECORD, 1912.

INFECTIOUS CASES REMOVED.

Month.	Cases Removed Total	Cases Removed (Average Daily).	Journeys.	Mileage Total.	Mileage (Average Daily).
January	70	2·3	57	930	30·0
February	85	2·9	63	925	31·8
March ...	76	2·4	64	1,023	33·0
April ...	62	2·0	45	701	23·3
May ...	75	2·4	65	1,049	33·8
June ..	68	2·2	55	871	29·0
July ...	91	2·9	62	1,105	35·6
August ...	72	2·3	52	900	29·0
September	80	2·6	58	993	33·1
October ...	83	2·6	53	917	29·5
November	101	3·2	68	1,033	33·3
December	140	4·5	75	1,230	39·6
Totals ...	1,003	2·77 (Average Daily).	717	11,677	31·99 (Average Daily).

DISINFECTION STATION AND AMBULANCE SERVICE.

The Disinfection Station is on the site formerly occupied by the City Small-pox Hospitals in St. Philip's Marsh, and the buildings now comprise:—

(1) Disinfecting Block containing two Steam Disinfecting Machines, Receiving Room, Clearing Room, and a Boiler House.

These rooms have been erected for some years, and are sufficient for the purpose, except that the Boiler House would be more convenient if a little larger. No laundry is attached, as this was deleted from the original plans.

(2) The new Stable buildings, completed in 1906, comprise stalls for eight horses and two loose boxes. The stabling is of modern construction, fairly lighted and well ventilated, and has enough accommodation to meet the requirements of the Ambulance and Disinfecting Services. Near to the Stable is a small forage room, and a harness room which is also used as a mess room and offices.

The Stable was so designed that conversion to a motor house would be simple and inexpensive.

The old sheds have been enlarged and adapted to serve as coach house and cart shed.

It is contemplated to remove the Ambulance Service from Clift House Stables, where there is cottage accommodation for both the ambulance driver and the stableman.

In October, 1909, a Motor Van commenced running for the collection of infected articles. This Motor Van displaced the services of two drivers, and also dispensed with the work of two horses. It is worked in conjunction with a horse delivery cart for the return of articles

after disinfection. Only one horse is now attached to the Disinfecting Service. The caretaker of the Disinfecting Station is driver of the Motor Van.

In November, 1912, a Motor Ambulance was provided for the removal of patients to Hospital, replacing the two pair-horse Ambulances, which are now in use in relief; but, in case of Smallpox, might both be found necessary for routine service.

The following accommodation is provided for the Ambulance Nurse and the Caretaker :—

CARETAKER. —(Ground Floor)—Sitting-room and office, kitchen, scullery, offices, &c.

(First Floor)—One bedroom and use of bathroom, &c.

AMBULANCE NURSE.—(First Floor)—One sitting-room, one bedroom, and use of bathroom, &c.

ISOLATION ROOMS, under the Infectious Disease (Prevention) Act—Four rooms, viz. :—

(Ground Floor)—Kitchen, sitting-room, scullery, bath room, offices.

(First Floor)—Two bedrooms.

This accommodation is provided in one building; the Isolation Rooms being self-contained and under the supervision of the Caretaker.

The accommodation was completed in 1909, and has been in occupation since October of that year.

VACCINATION.

The 1911 returns are the last complete ones available. I am indebted to the Clerk of the Bristol Union for the following information :—

	BRISTOL UNION.
VACCINATION.	
Number successfully vaccinated up to 31st January, 1913 ...	2,938
Insusceptible	13
Died unvaccinated	753
Postponed by Medical Certificate	71
Certificates of Conscientious Objection	1,743
Removed to Districts, the Vaccination Officer of which has been duly apprised	217
Cases left and not traceable ...	935
In abeyance	1,105
Births registered in 1911 ...	7778
*Percentage of successful vaccination to births	37.78

* A special return of Certificates of successful primary vaccinations at all ages received in each of the calendar years since 1900, was furnished at the request of the Local Government Board, and showed as follows:—Certificates received in 1900 5,917; in 1901, 5,776; in 1902, 6,898; in 1903, 6,972; in 1904, 7,413; in 1905, 7,253; in 1906, 6,870; in 1907, 6,464; in 1908, 5,092; in 1909, 5,377; in 1910, 4,367; in 1911, 3,443; and in 1912, 3,285.

The continuous and marked decline in vaccination of late years will result, but nobody can say when, in sad awakening for many a misguided parent, and in hospital accommodation difficulties for unready authorities.

It would not serve any useful purpose to state fully my views on the folly of this neglect, for, as Chesterton, I think, has said, "The masses will only accept as true, statements made without authority." And anti-vaccination is a "cult," not a state of mental conviction.

PAUPERISM.

* **Bristol Union.**—Summary of Persons relieved on the following dates: the first named date (1st April, 1898) being the date of the formation of the Union for the City and County of Bristol.

	1st April, 1898.	1st April, 1899.	1st April, 1900.	1st April, 1901.	1st April, 1902.	1st April, 1903.	1st April, 1904.	1st April, 1905.	1st April, 1906.	1st April, 1907.	1st April, 1908.	1st April, 1909.	1st April, 1910.	1st April, 1911.	1st April, 1912.	1st April, 1913.
In Workhouses and Children's Homes	2,357	2,281	2,305	2,408	2,355	2,388	2,513	2,578	2,528	2,653	2,745	2,855	2,944	2,874	2,927	2,758
In Institutions, &c.	114	116	127	127	148	155	149	159	146	148	135	125	123	139	131	167
In Lunatic Asylums	826	824	810	830	847	856	859	869	875	881	863	831	859	883	867	849
Out-door Poor ...	7,796	6,409	5,847	5,837	5,845	5,829	6,030	6,425	6,116	5,921	5,696	5,585	5,764	4,280	4,472	4,037
— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —
	11,093	9,630	9,089	9,202	9,195	9,228	9,551	10,031	9,665	9,603	9,439	9,396	9,690	8,176	8,397	7,811
Weekly cost of Out- Relief	£724 6 1	£683 14 11 ³ / ₄	£644 14 7	£662 18 4 ³ / ₄	£697 16 9 ¹ / ₂	£710 0 10 ¹ / ₂	£746 4 3 ¹ / ₂	£803 19 8	£792 12 2 ¹ / ₂	£765 14 1 ¹ / ₂	£756 8 3	£765 13 4	£785 6 5	† £504 0 10	£589 9 8	£509 9 9

* This Union was much increased in area and population in October, 1904.

† This reduction is due to the large number of cases transferred to the Old Age Pension List

Medical Officer of Health's Department.

—:O:—

CLERICAL RETURNS.

Number of letters and documents received at and despatched from the Office.

	1904		1905		1906		1907		1908		1909		1910		1911		1912	
	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.
M.O.H. ...	4,481	5,490	10,603	15,104	9,124	8,727	9,417	8,475	9,000	8,144	10,420	12,742	12,755	15,656	19,060	27,874	26,412	34,123
Infectious Disease	20,037	36,605	14,280	19,859	12,488	17,990	14,519	20,874	11,496	16,177	10,704	13,977	11,473	15,354	9,564	13,130	14,397	19,794
Hospitals	2,816	3,465	3,025	2,810	3,214	3,055	4,746	3,883	3,290	3,111	4,604	4,850	4,491	8,311	4,097	8,088	5,231	8,476
Inspectors	3,485	2,656	6,250	5,959	5,802	4,505	5,943	4,201	4,124	3,744	5,689	5,357	12,555	15,444	14,245	17,701	16,342	18,973
Port ...	633	1,058	962	1,003	1,056	957	1,768	1,905	1,337	1,670	3,237	3,636	2,666	3,022	3,420	4,627	5,379	6,843
	31,452	49,274	35,120	44,735	31,684	35,234	36,303	39,338	29,247	32,846	34,654	40,562	43,940	57,787	50,386	71,420	67,761	88,209
TOTAL ...	80,726		79,855		66,918		75,731		62,093		75,216		101,727		121,806		155,970	

1912-1913.

Baths and Wash-houses.

The following figures are returned for the year's work :—

Year ended 25th March, 1913.	No. of Bathers. Swimming Baths.	Private Baths.	Women Washing Clothes.
"Victoria," Clifton (Baths only)	13,454	2,811	...
"Royal" Kingsdown (Baths only)	38,640	...	...
Broad Weir	28,018	26,605	15,164
Mayor's Paddock, New Cut	32,045	27,250	18,103
Jacob's Wells (Baths only)	40,544	19,389	...
Rennison's (Swimming Bath only)	6,594	...	...
Barton Hill	64,783	29,856	...
Eastville Park (Swimming Bath only)	1,439	...	...
Victoria Park (Swimming Bath only)	7,410	...	...
Greville Park (Swimming Bath only)	5,971	...	...
Total ...	247,898	105,911	33,267

1911-12	350,566	109,958	32,415
1912-13	247,898	105,911	33,267
	(—) 102,668	(—) 4,047	÷ 852

(Up to March 25th, 1913.)

Particulars supplied by Mr. J. KANE.

Mr. Edward Russell, B.Sc., F.I.C., City Analyst, has kindly supplied the following returns for 1912.

“FOOD AND DRUGS ACT.”

During the year 1,301 samples were submitted for analysis; 1,300 samples were received from the Inspector and one from a private purchaser.

The following Tables show the nature and number respectively of the samples submitted, with the number reported genuine and the number adulterated:—

Number of samples examined	...	...	1,301
„ „ „ genuine	...	...	1,194
„ „ „ adulterated	...	...	107

Article	Number Examined	Number Genuine	Number Adulterated.	Per cent. Adulterated.
Milk	645	566	79	12.25
Milk (skim)	5	2	3	60.0
Butter	307	294	13	4.23
Margarine	30	30	0	0
Cheese	24	24	0	0
Cream	9	8	1	11.1
Condensed Milk	3	3	0	0
Lard	10	10	0	0
Lard Substitutes.....	2	2	0	0
Spirits	61	55	6	9.85
Sugar and Sweets ...	24	24	0	0
Wheaten and other				
Flours	49	48	1	2.85
Vinegar	10	10	0	0
Coffee.....	20	20	0	0
Cocoa and Cocoa				
Essence	9	9	0	0
Pepper	17	17	0	0
Mustard	11	10	1	8.33
Tea	10	10	0	0
Gravy Salt	2	2	0	0
Egg Powder.....	1	1	0	0
Lemonade Crystals	4	4	0	0
Baking Powder	3	3	0	0
Drugs	42	39	3	7.32
Gellies (Gelatine) ...	1	1	0	0
Mixed Herbs	1	1	0	0
Curry Powder	1	1	0	0
	1301	1194	107	8.22

The working of these Acts in the City of Bristol is entrusted to an Inspector acting under the Watch Committee and is not administered by the Health Committee.

METEOROLOGICAL OBSERVATIONS AT BRISTOL, 1912.

JANUARY.—The year opened with very fine conditions, but almost at once pressure commenced to give way, and from the 3rd to the 24th, inclusive, not a day passed without more or less precipitation. During the greater part of this period mild weather prevailed, but a heavy snow-storm on the 17th and 18th was followed by much lower temperatures. A series of severe frosts were experienced during the closing days.

The mean temperature (max. and min.) was 39 degrees—a value almost identical with the average. The maximum reading was 49 degrees on the 4th, 9th, 13th and 14th, and the minimum 20 degrees on the 30th—a range of 29 degrees. The warmest day was the 3rd, with a mean temperature of 46·5 degrees; and the coldest the 29th, mean 27 degrees. At Frampton Cotterell the extremes of temperature were 50·2 degrees on the 13th, and 15·4 degrees on the 30th; and the number of frosty nights, 8.

The total rainfall locally varied from 3·92 inches at Clifton, to 4·13 inches at Frampton Cotterell; falling upon 18 and 21 days respectively. These amounts show an excess for the month of about an inch.

Mean atmospheric pressure at 9 a.m. was 29·937 inches, a value well below the average of the past fourteen years. The greatest pressure recorded was 30·506 inches on the 1st, and the least 29·039 inches on the 6th.

FEBRUARY.—This month gave some of the warmest—and also some of the coldest—winter weather experienced for many years past. The first few days brought frost of great severity, but on the 5th a cyclone, which appeared

off our south-west coasts, caused a complete reversal of conditions. The remainder of the month was uninterruptedly warm and mild, the maximum temperature more often than not exceeding 50 degrees, and during the concluding week 60 degrees were recorded at many stations upon several dates.

The mean temperature was 43·1 degrees, this being over three above the average, and the third year in succession in which the month has shown an excess of warmth. The maximum was 59 degrees on the 28th, and the minimum 19 degrees on the 3rd—a range of 40 degrees. The warmest day was the 28th, with a mean temperature of 53·5 degrees; and the coldest the 4th, mean 24·5 degrees. At Frampton Cotterell there were six frosty nights.

Rainfall at Clifton totalled 2·57 inches, falling upon 22 days, and at Frampton Cotterell 2·18 inches on 17 days. The value at Clifton shows an excess of one-tenth of an inch.

Mean atmospheric pressure at 9·0 a.m. was 29·645 inches; these figures being very much below the average; and nearly half an inch below that of the month a year ago. The maximum reading was 30·126 inches upon the 28th, and the minimum 28·941 inches upon the 8th.

MARCH.—A very wet and stormy month, not a day passing up to the 25th without a certain amount of rainfall in this locality; while gales and strong winds were of almost daily occurrence on various parts of our coasts. During the last week, however, although the general distribution of pressure remained the same, a great improvement in the weather took place, the low-pressure systems pursuing a much more northerly path than before, so that our southern districts came under the influence of the Continental anti-cyclone.

The mean temperature was as high as 46·6 degrees, a value no less than 4·2 degrees above the average. The maximum was 63 degrees on the 25th, and the minimum 33 degrees on the 16th—showing a range of 30 degrees. The warmest day was the 25th, with a mean temperature of 55·5 degrees; and the coldest the 18th, mean 39 degrees. The shaded thermometer did not once fall to freezing point throughout the month.

APRIL.—In great contrast to its predecessor, this month gave almost continuous fine weather, together with brilliant sunshine, and to find an April to equal it in these respects it is necessary to look back to the wonderful springtime of 1893. Still, the month was not without its drawbacks, for a severe and destructive gale occurred upon the 8th, while later several sharp frosts were experienced, very low temperatures being recorded during the early hours of the 12th, 29th and 30th.

The rainfall locally varied from 0·32 inches at Clifton, to 0·15 at Frampton Cotterell; falling upon 9 and 3 days respectively. These amounts show the deficiency to be about two inches.

The mean temperature was 49·6 degrees, this being nearly two above the average, and three and a half above that of the month in 1911. The maximum was 71 degrees on the 22nd, and the minimum 31 degrees on the 2nd—a range of 40 degrees. The warmest day was the 22nd, with a mean temperature of 57 degrees; and the coldest the 1st, mean 39 degrees. At Frampton Cotterell six frosty nights were recorded.

Mean atmospheric pressure was 30·182 inches, a value well in excess of the average. The greatest pressure recorded was 30·475 inches on the 13th, and the least 29·722 inches on the 10th,

MAY.—A most favourable month, although April having been so dry, a little more rain during its earlier half would have been very welcome. In praise of the month it must not be forgotten what magnificent weather was provided for Whitsuntide, in spite of the fact that the festival was immediately preceded and followed by heavy rainfalls. Altogether, the weather throughout was ideal for the time of year, and if not so warm and sunny as in 1911, was far more favourable from an agricultural point of view.

The mean temperature was 55·5 degrees, nearly two above the normal, although over one and a half below that of the month a year ago. The maximum was 74 degrees on the 10th, and the minimum 42 degrees on the 25th—a range of 32 degrees. The warmest day was the 10th, with a mean temperature of 64 degrees; and the coldest the 23rd, mean 47 degrees. There were no frosty nights.

The rainfall was 2·51 inches on 13 days at Clifton and 2·26 inches on the same number at Frampton Cotterell. These values show an increase of about a quarter of an inch.

Mean atmospheric pressure at 9 a.m. was 29·979 inches, a value very near the average. The maximum recorded was 30·385 inches on the 25th, and the minimum 29·549 inches on the 15th.

JUNE —From commencement to close the weather was of the most unsettled type, and only once in this neighbourhood were there two consecutive days entirely free from rain. The month's rainfall, indeed, proved the heaviest, and its rainy days the most numerous of any June since that of the deplorable summer of 1879. Although so wet, however, it proved not nearly so cold as in 1909 or 1907, and there is not much doubt that with a little

more sunshine and a little less wind, its mean temperature would have been fully up to the average.

The mean temperature was 57·8 degrees, a value one and a half degrees below the normal, but nearly three above that of the month in 1909. The maximum recorded was 74 degrees on the 22nd, and the minimum 43 degrees on the 5th—a range of 31 degrees. The warmest day was the 22nd, with a mean temperature of 65 degrees; and the coldest the 3rd, mean 52 degrees.

The rainfall at Clifton was 4·76 inches, and at Frampton Cotterell 5·25 inches; falling upon 22 and 23 days respectively. These values show a local excess of over two inches.

Mean atmospheric pressure at 9 a.m. was very deficient, more so than in any summer month for many years past. The value was 29·820 inches, the mean for the thirteen preceding years being 30·01 inches. The greatest pressure recorded was 30·092 on the 27th, and the least 29·396 inches on the 4th.

JULY.—A very good idea of the capabilities of our climate is obtainable by a comparison of this month with its namesake of 1911. In place of the continuous sunshine which then prevailed, there was in the present case, if we except a few days in the 3rd week, not one single day of real sunshine. Further, in regard to rainfall, one day's fall alone exceeded, twelve times over, the total amount recorded in 1911. In spite of all this, however, to give the month its due, it was much more favourable than June, its temperature falling very little short of the average, while its rainfall was by no means heavy up to the 25th.

The mean temperature was 61·7 degrees, a value which, although five below that of the month a year ago, is only the fraction of a degree below the normal. The

maximum recorded was 85 degrees on the 15th, and the minimum 46 degrees on the 9th—a range of 39 degrees. The warmest day was the 15th, with a mean temperature of 73·5 degrees; and the coldest the 29th, mean 56·5 degrees.

The total rainfall locally varied from 4·89 inches on 19 days at Clifton, to 4·38 inches on 18 days at Frampton Cotterell. These values show an excess of about 2 inches.

Mean atmospheric pressure at 9 a.m. was 29·931 inches, these figures being well below the average. The greatest pressure was 30·260 inches on the 5th, and the least 29·541 inches on the 29th.

AUGUST.—Although commencing with a rising barometer and two rainless days, this month proved more inclement than any summer month during the present century, and for at least a decade before. On the early morning of the 3rd a sharp ground frost was experienced, and towards the close of the day heavy rain set in. From then, onwards to the close, there was scarcely a day but what had recorded against it something substantial in rainfall, and something far below the average in temperature.

The mean temperature was 56·2 degrees, these figures being nearly five below the average, and no less than 10½ below those of 1911. The maximum recorded was as low as 68 degrees on the 4th, and the minimum 42 degrees on the 3rd. The warmest day was the 24th, with a mean temperature of 60·5 degrees; and the coldest the 3rd, mean 52·5 degrees.

The total rainfall locally was 8·38 inches at Clifton, and 6·52 inches at Frampton Cotterell, falling upon 25 days. The amount for Clifton exceeds the average by no less than 4·70 inches.

Mean atmospheric pressure at 9 a.m. was 29'747 inches, a remarkably low value for a summer month. The maximum reading recorded was 30'140 inches on the 31st, and the minimum 29'300 inches on the 6th.

SEPTEMBER.—This month has, on many occasions in the past, performed wonders in mitigating the ill-effects of an inclement summer-time. And now once again it proved its mettle, for until the 28th—apart from a couple of very slight falls during the first day or so—no rain whatever was recorded. One might wish that the sun had been more conspicuous throughout this long period of fine weather, and also that the temperature had proved higher; but still, after such a summer the gift of dry weather was of almost priceless value.

The mean temperature was only 53'2 degrees, a value $3\frac{1}{2}$ degrees below the average, and over six below that of the month a year ago. The maximum was 70 degrees on the 16th, and the minimum 38 degrees on the 25th and 27th. The warmest day was the 16th, with a mean temperature of 62 degrees, and the coldest the 25th, mean 48'5 degrees.

The total rainfall locally was 0'60 inch at Clifton, falling upon six days, and a similar value at Frampton Cotterell upon four days. This amount is deficient to the extent of over $2\frac{1}{4}$ inches.

Mean atmospheric pressure was well in excess of the normal, the figures at 9 a.m. being 30'182 inches. The greatest pressure recorded was 30'491 inches on the 30th.

Readings were continuously above 30 inches from the 3rd to the 27th, inclusive.

OCTOBER.—On the opening day, nearly three-quarters of an inch of rain fell, but immediately following this deluge came a period of the pleasantest weather experi-

enced throughout the year. The fine conditions lasted almost without a break until the 19th, when a period of rain set in which continued to the close. With little exception, both fine and wet periods were characterized by a deficiency of temperature, sharp frosty nights being of unusual frequency for the time of year.

The mean temperature was 47·8 degrees, about one and a half below the average, and over three below the month of that in 1911. The maximum recorded was 62 degrees on the 13th, and the minimum 31 degrees on the 5th. The warmest day was the 14th, with a mean temperature of 56 degrees; and the coldest the 4th and 23rd, mean 41·5 degrees. At Frampton Cotterell there were twelve frosty nights.

The rainfall locally varied from 4·57 inches at Clifton to 3·85 inches at Frampton Cotterell; falling upon 18 and 15 days respectively. These figures show an excess of over half an inch.

Mean atmospheric pressure did not differ materially from the normal, the value at 9 a.m. being 29·928 inches. The extreme readings were 30·641 inches on the 4th, and 29·928 inches on the 30th.

NOVEMBER.—Until within a week of its close, anti-cyclonic conditions predominated over our islands, so that very little rain fell, while the weather generally was quiet and mild. A great change, however, set in on the 25th, a very large and deep depression approaching our islands from the Atlantic. The centre of this, on the following day, passed across the North of Scotland, heavy rains and severe gales occurring nearly everywhere. In its rear the weather became very wintry, snow falling in many places, while frost set in with unusual severity.

The mean temperature was 44 degrees, nearly half a degree above the average, this being the first month since May without a deficiency of warmth. The maximum was 58 degrees on the 9th, and the minimum 28 degrees on the 30th. The warmest day was the 9th, with a mean temperature of 52·5 degrees; and the coldest the 30th, mean 31 degrees. At Frampton Cotterell there were six frosty nights. The total rainfall at Clifton was 2·44 inches, and at Frampton Cotterell 1·71 inches; falling upon 19 and 9 days respectively. Of the total at Clifton, 1·83 inches fell upon four days, the rest being due to very slight showers and drizzle. The deficiency for the month was nine-tenths of an inch.

Mean atmospheric pressure at 9 a.m. was 30·028, a value well above the normal. The maximum reading recorded was 30·420 inches on the 2nd, and the minimum 29·275 inches on the 29th.

DECEMBER.—This month opened with the promise of the coming at last of a real “old-fashioned winter.” This was not to be, however, for the 2nd brought a decided thaw, and the thermometer scarcely fell to freezing point again throughout the month. This unduly mild weather coincided with frequent rainfalls and much rough wind, Christmas week being especially wet and tempestuous.

The mean temperature was 44·8 degrees, being over 5 above the average. The extremes were 54 degrees on the 27th, and 27 degrees on the 1st. The warmest day was the 14th, with a mean temperature of 50 degrees; and the coldest the 1st, mean 35 degrees. At Frampton Cotterell there were three frosty nights, and at Clifton two.

The rainfall varied from 6·57 inches at Clifton, to 5·24 inches at Frampton Cotterell; falling upon 27 and 25

days respectively. The excess equalled three inches, the month being, with the exception of August, the wettest of the year.

Mean atmospheric pressure at 9 a.m. was 29.912 inches, a value not much below the normal. The extremes were 30.390 inches on the 3rd, and 29.300 inches on the 26th.

The twelve months in their entirety show a most remarkable contrast to the preceding year, giving a total rainfall so large as almost to constitute a record; while, in regard to temperature and sunshine, the deficiency during the summer months was quite as extraordinary as the excess of a year before.

H. H. HARDING, F.R. Met. Soc.

For the rainfall values at Clifton, and also for those relating to temperature given in the foregoing notes, I am indebted to the courtesy of Mr. R. F. Sturge, F.R. Met. Soc.

The rainfall values at Clifton are taken at an altitude of 215 feet above sea level, and for Frampton-Cotterell at 166 feet.

Rainfall of 1912.
Taken at Clifton College.

WEEK ENDING.	RAIN INCHES	WEEK ENDING	RAIN INCHES
January 6	·875	July 6	·680
„ 13	·505	„ 13	·170
„ 20	1·410	„ 20	·270
„ 27	780	„ 27	1 545
February 3	·01	August 3	2·830
„ 10	·570	„ 10	2 50
„ 17	·510	„ 17	1·110
„ 24	·950	„ 24	3·030
March 2	·525	„ 31	1·880
„ 9	1·880	Sept. 7	·150
„ 16	1·050	„ 14	Nil
„ 23	1·580	„ 21	Nil
„ 30	·290	„ 28	·042
April 6	·205	October 5	1·130
„ 13	·250	„ 12	Nil
„ 20	·010	„ 19	·345
„ 27	Nil	„ 26	1 455
May 4	·170	Nov. 2	1·745
„ 11	·290	„ 9	·240
„ 18	·615	„ 16	·150
„ 25	1·190	„ 23	·086
June 1	0·360	„ 30	1·830
„ 8	1·265	Dec. 7	·445
„ 15	1·065	„ 14	1·68
„ 22	·280	„ 21	1 09
„ 29	1·450	„ 28	2·92

D. RINTOUL.

Meteorology for the 52 Weeks, ending 28th December, 1912.

Height above Mean Sea Level—250 feet.

CLIFTON COLLEGE.

1912	BAROMETRIC PRESSURE at 30" and Sea Level				Mean Temperature	Highest Mean Daily Temperature	Lowest Mean Daily Temperature	Max. Temperature in shade at 4 ft above ground	Min. Temperature at 4 ft above ground	Min. Temperature on ground	Mean Daily Range of Thermometer	Greatest Daily Range of Thermometer	Smallest Daily Range of Thermometer	Mean Humidity	Grains of Vapour in a cubic ft. of air	Prevalent Wind.
	Week Ending	Mean Inches	Highest Inches	Lowest Inches												
Jan.	6	30.05	30.51	29.02	46.1	48.2	42.8	50.6	39.3	34.0	5.2	11.0	2.0	88.5	3.15	W.
"	13	29.86	30.28	29.29	42.6	45.3	39.5	50.9	29.5	24.9	11.8	21.4	2.3	88.5	2.79	S.E.
"	20	29.90	30.15	29.64	41.0	46.2	34.4	49.6	29.2	27.1	8.4	18.0	1.3	91.9	2.94	S.E.
"	27	29.87	30.19	29.55	36.3	40.1	32.9	41.8	28.7	25.4	4.9	8.4	2.7	96.1	2.44	N.E.
Feb.	3	29.99	30.37	29.42	29.6	35.9	25.7	40.0	18.4	17.8	12.7	19.3	6.3	84.2*	2.0*	N.W.
"	10	29.22	29.60	28.93	38.9	49.8	24.6	55.5	20.5	18.9	13.0	21.3	8.3	87.6†	2.90†	S.E.
"	17	29.79	30.08	29.21	45.8	50.5	42.8	54.1	37.4	31.2	8.4	11.7	5.1	89.6	3.02	S.E.-N.
"	24	29.76	29.94	29.40	47.6	53.1	44.3	56.1	35.4	30.0	10.2	18.1	4.1	87.9	3.25	S.
Mar.	2	29.88	30.14	29.68	49.7	52.6	45.3	57.0	39.4	40.1	9.0	13.7	6.5	82.9	3.3	S.
"	9	29.57	29.95	29.34	46.0	47.7	42.5	53.4	36.5	29.7	10.5	14.1	6.1	83.8	2.76	W.
"	16	29.97	30.33	29.71	46.0	52.2	41.6	56.4	34.0	30.9	11.1	15.1	5.3	89.1	3.0	W.
"	23	29.40	30.01	28.90	44.0	47.2	40.5	52.1	36.2	32.3	10.1	14.5	4.9	83.0	2.7	S.-W.
"	30	30.10	30.33	29.65	50.3	55.7	45.5	61.6	39.9	35.9	10.0	12.6	7.5	78.8	3.2	W.
April	6	30.21	30.56	29.70	47.2	50.7	41.5	56.9	32.6	27.7	11.3	19.5	4.9	81.8	3.1	N.W.-S.E.
"	13	30.11	30.51	29.77	46.9	51.9	42.7	56.8	33.1	29.4	12.8	19.2	7.3	77.5	2.8	W.
"	20	30.21	30.47	29.95	50.6	53.8	47.9	65.2	37.7	33.4	18.8	23.8	12.3	69.2	2.97	N.
"	27	30.26	30.45	29.86	54.1	57.9	49.2	70.6	39.3	38.4	22.1	25.3	17.0	68.4	3.01	N.E.
May	4	30.12	30.36	29.99	51.3	56.9	46.2	64.8	36.9	33.4	15.1	22.5	6.0	75.1	3.21	N.
"	11	30.12	30.34	29.81	59.0	64.2	54.1	73.3	49.4	48.0	11.9	18.3	7.0	82.2	4.39	W.
"	18	29.91	30.17	29.58	55.2	58.5	50.5	68.3	44.9	41.7	13.0	20.6	5.0	75.3	3.59	N.E.-N.W.
"	25	29.92	30.39	29.57	55.0	57.4	49.4	63.5	43.2	39.9	13.5	20.2	5.3	73.7	3.4	S.-N.
June	1	29.95	30.24	29.70	56.7	58.2	55.1	68.8	45.3	41.7	18.4	21.4	13.8	69.2	3.7	W.
"	8	29.62	29.91	29.40	54.8	57.4	52.6	65.0	45.0	41.1	11.9	17.0	6.3	83.1	4.0	N.-W.
"	15	29.88	29.96	29.72	58.1	61.1	56.9	69.0	45.6	42.9	13.7	23.4	9.5	73.2	3.96	N.-W.
"	22	29.96	30.08	29.78	60.4	65.5	56.6	77.0	49.2	47.8	14.2	23.1	6.0	76.5	4.4	W.
"	29	29.88	30.11	29.76	59.7	62.0	58.2	69.0	52.8	48.0	11.9	15.4	10.2	72.2	4.1	S.

* Average of 2 days, wet bulb thermometer frozen 5 days.

† Average of 4 days.

Meteorology for the 52 Weeks—Continued.

Height above Mean Sea Level—250 feet.

CLIFTON COLLEGE.

1912	BAROMETRIC PRESSURE at 30° and Sea Level				Mean Temper- ature	Highest Daily Temper- ature	Lowest Mean Daily Temper- ature	Max. Temper- ature in Shade	Min. Temper- ature at least 4 ft above ground	Min. Temper- ature on ground	Mean Daily Range of Ther- mometr	Greatest Daily Range of Ther- mometr	Smallest Daily Range of Ther- mometr	Mean Hu- midity	Grains of Vapour in a cubic ft. of air	Prevailing Wind.
	Week Ending	Mean	Highest	Lowest												
July	6	Inches 30.02	Inches. 30.26	Inches 29.88	59.5	64.5	58.1	73.5	51.0	44.9	13.0	18.0	10.4	77.4	4.21	N.-N.E.
	13	30.00	30.15	29.88	62.7	68.6	57.7	79.1	47.1	43.2	14.8	21.1	8.8	76.0	4.9	S.
	" 20	30.05	30.14	29.89	66.3	74.9	56.0	88.0	50.0	45.7	18.4	26.2	12.0	77.8	4.8	N.
Aug.	27	29.88	29.98	29.71	64.0	68.6	61.5	73.3	54.0	52.2	12.1	16.1	6.5	81.1	5.04	S.
	3	29.66	29.93	29.47	57.0	59.9	52.3	64.2	42.5	39.3	12.4	19.5	8.0	79.4	4.19	S.E.
	10	29.65	29.88	29.31	57.4	61.5	54.2	69.4	50.1	45.4	11.9	16.7	7.5	83.8	4.37	S.W.
" "	17	29.93	30.18	29.78	56.1	61.1	51.5	63.4	43.0	41.3	11.6	17.0	3.4	79.2	4.13	W.
	" 24	29.78	30.13	29.57	57.7	63.2	52.9	67.0	48.4	44.8	10.4	12.7	9.0	84.4	4.43	S.E.
	31	29.69	30.12	29.31	56.6	60.7	52.9	66.9	44.8	40.2	8.3	17.1	1.1	74.3	4.08	S.E.
Sept.	7	30.07	30.27	29.91	55.6	59.1	52.5	62.5	42.8	41.7	10.7	19.4	6.9	71.5	3.78	S.E.—S.W.
	14	30.32	30.53	30.20	53.4	58.9	49.1	64.4	41.8	36.9	13.1	19.1	8.8	76.5	3.57	N.E.
	" 21	30.41	30.54	30.26	54.7	59.3	49.8	68.4	42.0	42.9	13.7	22.0	4.5	81.6	3.77	E.
" "	28	30.26	30.47	29.93	51.5	55.3	47.5	63.5	39.3	36.7	16.0	19.1	12.8	74.8	3.07	E.
	5	29.95	30.68	29.39	48.5	55.5	42.5	61.2	32.6	26.8	14.3	23.0	6.1	85.6	3.12	N.
	12	30.30	30.37	30.26	48.3	50.2	46.6	60.2	35.7	30.0	19.8	23.5	16.9	89.7	2.98	E.
Oct.	19	30.25	30.41	30.11	49.9	54.4	46.0	61.1	37.5	31.7	13.9	18.3	10.3	87.3	3.53	S.—W.
	" 26	29.51	29.79	29.32	45.4	52.5	42.1	58.7	33.2	28.5	12.7	22.6	8.9	90.4	2.91	S.—W.
	Nov. 2	29.75	30.42	29.29	48.6	55.9	39.6	58.0	33.1	26.8	9.8	15.8	4.1	87.8	3.41	S.
" "	9	30.25	30.41	29.86	49.9	52.8	42.9	56.8	37.9	30.5	7.7	12.6	2.3	88.2	3.55	S.—W.
	16	29.89	30.24	29.54	43.5	48.1	41.5	52.0	35.9	27.7	7.9	13.0	4.7	80.5	2.59	N.W.
	" 23	30.24	30.40	30.13	48.0	51.2	43.6	56.1	36.2	27.0	9.0	14.9	4.8	88.5	3.4	W.
" "	30	29.69	30.27	29.29	40.8	48.9	31.3	54.3	29.6	24.4	8.1	12.7	3.4	85.5	2.69	S.W.—N.W.
	Dec 7	30.00	30.39	29.74	42.8	47.5	36.7	54.0	28.0	20.4	15.7	20.9	10.9	86.8	3.24	S.
	14	29.98	30.11	29.66	48.4	51.4	45.6	54.2	40.3	30.9	8.3	12.5	4.4	85.3	3.40	S.
" "	" 21	29.92	30.23	29.56	45.8	50.6	41.5	54.0	36.8	29.9	7.9	14.7	2.9	87.7	3.05	S.—W.
	" 28	29.72	29.89	29.20	47.2	49.5	42.8	57.2	37.3	34.4	10.2	16.8	3.1	88.4	3.39	S.—S.E.

Rainfall 1912.

MONTH.			Rainfall in Inches.	Average of 31 years.	Departure from Average.	No. of days on which 0·1 inches or more rain fell.
January	...	...	3·580	2·595	+ 0·985	21
February	...	...	2·285	2·250	+ 0·035	20
March	...	...	5·260	2·402	+ 2·858	26
April	...	...	0·275	2·198	- 1·923	4
May	...	...	2·275	1·978	+ 0·297	12
June...	...	...	4·470	2·519	+ 1·951	22
July...	...	...	4·860	2·735	+ 2·125	16
August	...	...	8·060	3·386	+ 4·674	23
September	...	...	0·542	2·482	- 1·940	4
October	...	...	4·325	3·902	+ 0·423	15
November	...	...	2·306	2·984	- 0·678	13
December	...	...	6·425	3·693	+ 2·732	25
			44·663	33·124	+ 11 539	201

D. RINTOUL.

PART III.

THE CITY HOSPITALS.

Ham Green Hospital.

Novers Hill Hospital.

These Institutions have, during the year 1912, abundantly justified their existence.

During the first eight months of the year, Novers Hill Hospital was engaged in dealing with an introduction of Small-pox. Although the number of cases at any one time caused no undue pressure upon the available space, the imperfect nature of the means for effectually dealing with the disease, especially the absence of sufficient observation wards, the lack of a proper bathing and discharge block, and the insufficient accommodation for the staff, threw unnecessary difficulties in the way, and caused continuous anxiety to the responsible officers. The dilapidated cottages which once afforded some relief in these respects, and which have not been replaced though now useless, should be removed, and the proposed extensions proceeded with. Until this is done, the City has no Small-pox accommodation it can contemplate with any pride, or even with a feeling of full security.

Ham Green Hospital has been more fortunate in being well provided with essentials; and here, too, the year's work has been full of interest.

The lessening of the **average length of stay in Hospital**, especially in the case of Scarlet Fever, has had the effect of adding the value of twenty per cent. more beds to the Hospital; and this, joined to the success which has attended Dr. Peters' institution of bed-isolation and aseptic nursing, has enabled us to devote two blocks for the present (while the Scarlet Fever wave is low in the City) to Sanatorium purposes, with most gratifying results, which not only show that the site is unquestionably a suitable one for Sanatorium purposes, but reflect the extreme medical care and nursing attention devoted to the patients.

One further point of interest is to be found in the successful application of **open-air wards** to the nursing of fever cases.

The old plan put warmth first and fresh air second in the treatment of fever cases. We now consider both factors equally essential, and the patients get well more quickly, and more surely.

The Medical and Nursing Staff of both Hospitals have loyally worked through a trying year, and have saved me from all but unavoidable anxiety.

D. S. DAVIES, M.D., L.L.D., D.P.H.

General Medical Superintendent, City Hospitals.

ISOLATION HOSPITAL ACCOMMODATION IN BRISTOL SINCE 1886.

	Guardians.	St. Philip.	St. George.	Clift House.	Novers Hill.	Ham Green.	Population of City.	Total Beds.	Proportion of Beds per 1,000 Population.
1886	120	28					214,000	148	0.7
1894	60	48		30	50		226,000	188	0.8
1898	60	Closed	6	Closed	50		316,000	116	0.3
1900	Closed	24	6	22	50	76	324,000	156	0.5
1901		24	Closed	22	35	76	329,000	157	0.4
1902		Closed		22	35	76	334,000	133	0.3
1905				22	35	134	358,000	191	0.5
1906				Closed	35	134	363,000	169	0.4
1912					35	134	357,000	169	0.4

CITY HOSPITAL, HAM GREEN,
BRISTOL.

Report of the Resident Medical Officer
for the Year 1912.

TO THE MEMBERS OF THE COMMITTEE OF MANAGEMENT.

GENTLEMEN,

I have the honour to submit to you the Fourteenth Annual Report of the work of this Hospital, for the year ending December 31st, 1912.

There were 91 patients in Hospital at the beginning of the year, 865 were admitted, 784 were discharged, 36 died, 14 were transferred to Novers Hill Hospital, leaving 122 in Hospital at the end of the year; 956 patients were therefore under treatment during the year, a number in excess of the average for the last ten years.

The average daily number of patients in Hospital was 95.

This low average is accounted for by the fact that the **average length of stay in Hospital** was reduced to 43 days for those who recovered, which is 10 days less than the average of the previous five years.

This reduction has been effected—

- (1) By eliminating very largely cases of cross infection by the methods instituted last year.
- (2) By the reduction of the minimum period of isolation after Scarlet Fever from six weeks to one calendar month.

This reduction of stay in hospital is equivalent to the addition of twenty per cent more beds to the Hospital, and has enabled two blocks to be used for cases of Pulmonary Tuberculosis during the autumn.

The average death rate for all diseases, calculated on the discharges, was 4·3. This rather higher rate is due to the excessive proportionate number of Diphtheria cases admitted during the year. Eight of these cases were admitted moribund, and died in less than 48 hours after admission. Omitting these, reduces the death rate to 3·8 per cent.

SCARLET FEVER.

345 cases were admitted ; 333 were discharged, and 5 died.

Removal to Hospital was effected in 90 per cent. during the first week of illness.

The Fatality rate was 1·5 per cent., the disease being of the mild type now prevalent for several years.

The cause of death in four of the fatal cases was Septic Intoxication and Uraemia, following Nephritis in one case.

The average stay in Hospital of these patients was 43·16 days for those who recovered. A large number

were discharged at the end of one calendar month. Those suffering from complications were detained until well.

This reduced period (which compares with an average of 53 days for the previous five years) was attended by the lowest return-case rate recorded since the opening of the Hospital, namely—0·8 per cent., as only three patients out of a total of 362 (including 29 mixed infectious) who were discharged, apparently infected anyone else.

I am disposed to attribute this very low rate to the fact that our aseptic nursing has practically eliminated Secondary Rhinitis, which is the most frequent cause of return cases.

A bacteriological examination was made of the nose and throat of all Scarlet Fever patients, to determine the presence of the Diphtheria bacillus. It was found in the throats of 24, the noses of 5, and in both situations in 9, giving a total of 38, or 11·5 per cent.

The cases showing clinical evidence of diphtheria are counted under mixed infections. These carrier cases are allowed to remain in the ends of the main wards, but are separated from the others by a cord stretched across the ward, and are not allowed to mix with the other patients.

DIPHTHERIA.

439 cases of Diphtheria were admitted, a number considerably in excess of the three previous years; 358 were discharged well and 28 died. The type was of a virulent nature in a large number of the cases.

The average stay in Hospital was 41·6 days for those who recovered.

The fatality rate was 7·2 per cent. Eight patients were admitted moribund, and died in less than 48 hours after admission. Excluding these, the death-rate becomes 5·3 per cent. The situation of the disease was as follows:—

Throat	...	...	...	286
Throat and Nose	...	...	...	34
Throat and Larynx	...	...	...	21
Throat, Nose and Larynx	...	...	...	5
Nose	...	...	...	29
Larynx	..	...	...	5
Ear	...	...	...	6

Of those with Laryngeal involvement 12, or 36 per cent., required operative treatment to prevent suffocation, six were intubated and four tracheotomized; while two were intubated and had to be tracheotomized. Four out of the twelve operated on died, a mortality of 33 per cent.

Cause of Death.—Twelve died within five days of admission from acute Toxæmia, 10 from Heart Failure, two from Paralysis of the Respiratory Muscles, two from Broncho-pneumonia, one each from Mastoiditis and Cellulitis of the neck. 72 cases received some Antitoxin before admission (18 per cent.). It is very regrettable that a large number of these cases do not come under treatment until too late. A number of cases were lost through the patients' parents mistaking the enlargement of the neck glands which usually occurs, for Mumps, and not having medical advice until the patient was moribund or nearly so.

Post-Diphtheritic Paralysis.—Thirty-five patients suffered from Paralysis of the Palate, 4 from Paralysis of the Eye Muscles, and 27 from partial Paralysis of the Limbs,

ENTERIC FEVER.

Thirty-six cases of Enteric Fever were admitted, 32 discharged, and one died from Broncho-pneumonia—a fatality rate of 3 per cent. Two suffered from Broncho-pneumonia (one died), four from relapses, one from Hæmorrhage, one from Pyæmic Abscesses.

MIXED INFECTIONS.

Thirty-seven patients were found to be suffering from a second infection to the one notified, or were incubating a second one on admission.

Scarlet Fever and Clinical Diphtheria	...	16
Scarlet Fever and Whooping Cough (1 died)		8
Scarlet Fever and Chicken-pox	... ..	2
Scarlet Fever and Measles	... ..	1
Scarlet Fever and Mumps	... ..	1
Scarlet Fever and German Measles	..	1
Diphtheria and Measles	... ..	2
Diphtheria and Enteric Fever	... ..	1
Diphtheria and Chicken Pox	... ..	3
Diphtheria and Whooping Cough	... ..	2
Diphtheria, Whooping Cough and Chick-		
ken-pox	... ..	1

Notified as Scarlet Fever, and found on admission to be—

Measles and Varicella	... ..	1
Measles	... ..	1
Follicular Tonsillitis	... ..	1
Simple Erythema	... ..	2

Notified, as diphtheria and found to be—

Measles	... ..	1
Lobar-pneumonia	... ..	1
Tonsillitis	... ..	4

Notified as Enteric Fever, and found to be—

Mucous Colitis	...	...	...	1
Diarrhœa	...	...	...	1
Measles	...	...	...	1
Tuberculous Meningitis	...	...	...	1 (died)
				<hr/>
Total Mixed Infections	...	...	...	43
Other diseases (non-infectious)	...	...	...	10

From the 43 cases of mixed infections—all of which were first admitted into the main wards and afterwards treated in the side wards—only 6 cases contracted a secondary infection (0·7 per cent.), namely :—

4 cases of Scarlet Fever contracted Chicken Pox.
 2 ,, ,, ,, Measles.

This very low rate is apparently due to the rigorous care which is exercised by all the staff to avoid carrying infection from patient to patient, as each patient is provided with separate towels, face flannels, syringes, &c. All eating utensils are boiled after use. The staff, when handling the patients, wear gloves which are immersed in strong disinfectants after touching each patient. These methods appear to be sufficient for preventing the carriage of the infection of Scarlet Fever, Whooping Cough, Diphtheria, or German Measles. Chicken Pox and Measles still appear to spread to a diminished amount, in spite of these precautions, if they break out in the main wards.

Open-air Treatment.

All the patients are now treated in bed in the acute wards, with all the windows wide opened, even in winter. They are provided with hot-water bottles and additional bed-clothing if the weather is cold. Since this has been done, several invasions of Chicken Pox have been followed by no secondary cases.

No harm has resulted to any of the patients from this free exposure to the air. In fact, they convalesce more rapidly, and have better appetites. They are transferred to warm convalescent wards when all danger of developing a second disease is past, after about a fortnight.

All cases of mixed infections are treated in the side wards, which are in aerial continuity with the main wards and nursed by the same staff, so that the isolation block had not been used for many months until opened for cases of Pulmonary Tuberculosis. On no occasion has infection spread from the side wards to the main wards.

Four cases of Measles were admitted during the year.

Pulmonary Tuberculosis.

During the Autumn two blocks—the isolation blocks and the large pavilion—were devoted to the treatment of Pulmonary Tuberculosis on full Sanatorium lines. Twenty patients were admitted for four months' treatment.

Classification:—

Early cases	...	...	7
Moderately advanced	...	...	5
Advanced	...	...	8
			—
			20
			—

When the *early* cases were discharged, all symptoms and nearly all the physical signs of the disease had disappeared. These cases may be regarded as being cured, for the time at least, and were fit to resume their ordinary

occupations. In none of these was the tubercle bacillus found on discharge.

Four of the moderately advanced cases were discharged with all symptoms of the disease gone, including the disappearance of the bacillus from the sputum. These were quite able to resume work, the disease being arrested. In one the disease still showed some signs of occasional activity—a chronic fibroid variety of case—but was greatly improved.

Among the 8 advanced cases—of which three were complicated by laryngitis—in six the disease was arrested, the patients being restored to very fair health; one was no better, and one was worse.

All the patients were treated with continuous inhalation, combined with graduated labour and tuberculin injections were advisable.

VACCINATION STATISTICS.

Unvaccinated	...	...	203—24·7 per cent.
One Mark...	...	...	186—22·7 „
Two Marks	...	...	183—22·3 „
Three Marks	...	...	155—19·0 „
Four Marks	...	...	93—11·3 „

STAFF ILLNESS.

Four nurses and three ward-maids contracted Diphtheria, two nurses contracted Enteric Fever, one nurse Measles, and one Chicken-pox. These accounted for 49

days' loss of service. Minor illnesses accounted for 361 days' loss of service. Average loss of service per head for all staff, 13 days.

GENERAL.

19,068 articles were disinfected in the steam sterilizer.
152,397 articles were washed in the Hospital Laundry.

In conclusion, I beg to acknowledge Miss Garden's invaluable co-operation in administering the Hospital, and the good work done by the nursing and working staffs.

B. A. PETERS, M.B., D.P.H.,

Resident Medical Officer.

HAM GREEN HOSPITAL.

TABLE I.

Admissions and Discharges during 1912.

Disease.	Remaining in Hospital End of 1911.	Admissions as Notified.	DISCHARGED.		Remaining at end of 1912.	Transferred to Novers Hill Hospital.
			Recovered.	Died.		
Scarlet Fever	40	345	333	5	31	14
Diphtheria	37	439	358	28	66	—
Enteric Fever	6	36	32	1	4	—
Mixed Infections	8	21	42	1	—	—
Pulmonary Tuberculosis	—	20	—	—	20	—
Other Diseases	—	4	19	1	—	—
Totals	91	865	784	36	121	14

HAM GREEN HOSPITAL.

TABLE II.

Showing Ages and Sexes of those Discharged during 1912, with Fatality Rate.

Scarlet Fever.										Diphtheria.																			
MALE					FEMALE					BOTH SEXES					MALE					FEMALE					BOTH SEXES				
Age.					Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.	Recovered	Died	Fatality per cent.				
0-1					...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1-5					39	...	...	24	2	7.7	63	2	...	35	2	5.4	79	8	9.2	2	2	5.4	169	14	7.6		
5-10					90	1	1.1	72	1	1.4	162	2	1.2	...	6	7.4	81	7	7.9	...	7	7.9	...	3	4				
10-15					37	1	2.6	39	...	...	76	1	1.3	...	1	2.5	33	2	5.7	...	2	5.7	72	3	4		
15-20					14	...	...	8	...	...	20	...	...	...	...	...	12	1	7.7	...	1	7.7	17	1	5.5
Over 20					4	...	...	6	...	...	12	...	...	...	...	...	16	...	—	...	...	19	—	...	
Totals					184	2	1	149	3	2	333	5	1.5	...	14	7.2	179	14	7.2	...	14	7.2	358	28	7.2				

HAM GREEN HOSPITAL.

TABLE III.

The Stage of the Disease when Patients were admitted to Hospital.

Disease.	DAYS OF FIRST WEEK.							1st Week	2nd Week and after	Transferred from Novers Hill	Carrier Cases.
	1	2	3	4	5	6	7				
Scarlet Fever ...	5	62	68	76	54	16	9	290	29	19	...
Recovered	...	52	73	68	55	41	22	311	15	...	32
Died	...	2	5	4	8	4	3	26	1	...	1
Mortality } per cent. }	...	3.7	6.4	5.5	12.7	9	12	...	...	..	...

HAM GREEN HOSPITAL.

TABLE IV.
Complications observed in Patients discharged during 1912.

Scarlet Fever.	Otorrhœa	Primary Rhinorrhœa	Cervical Adenitis	Cervical Abscess	Albuminuria	Nephritis	Arthritis	Endocarditis	Mastoiditis	Relapse
Total cases 338...	25	24	19	4	10	11	10	3	5	6
Percentage ..	7.4	7.1	5.6	1.2	3	3.2	3	0.9	1.5	1.7

TABLE V.
Monthly Admissions as Notified and daily Average number in Hospital.

1912.	Scarlet Fever	Diphtheria	Enteric Fever	Other Diseases	Pulmonary Tuberculosis	Total Monthly Admissions	Average Daily No. in Hospital in each Month
January	30	25	2	9	...	66	83
February	28	23	9	..	...	60	93
March	29	32	4	1	..	66	108
April	31	16	1	...	...	48	87
May	34	22	4	...	..	60	74
June	19	34	1	3	...	57	77
July	21	64	1	1	...	87	80
August	33	30	1	...	...	64	99
September	30	44	5	...	...	79	94
October	29	43	4	...	8	84	98
November	15	53	2	...	5	75	107
December	46	53	2	11	7	119	138
Year 1912	345	439	36	25	20	865	95

HAM GREEN HOSPITAL.

Statistics for each year since opening of Hospital.

TABLE VI.

ADMISSIONS CLASSIFIED ACCORDING TO DISEASE.

YEAR.	Scarlet Fever	Diphtheria	Enteric Fever	Mixed Infections	Other Diseases and Quarantine	TOTAL
1899	194	4	21	...	7	226
From July 24th						
1900	571	70	38	...	...	679
1901	452	27	44	..	4	527
1902	536	128	42	21	...	727
1903	370	323	11	11	...	715
1904	374	317	26	2	...	719
1905	476	310	...	19	12	817
1906	439	342	8	9	19	817
1907	370	445	...	43	31	889
1908	219	513	13	11	21	777
1909	414	359	8	23	49	853
1910	709	308	15	...	4	1,036
1911	478	338	70	11	...	897
1912	345	439	36	25	20	865
Totals	5,947	3,923	332	175	167	10,544

DISCHARGES AND DEATHS.

YEAR	Scarlet Fever		Diphtheria		Enteric Fever		Mixed Infections and other Diseases	
	Dis-charges	Deaths	Dis-charges	Deaths	Dis-charges	Deaths	Dis-charges	Deaths
1899	127	5	3	...	3	...	5	...
1900	485	15	50	12	33	1	...	...
1901	452	10	34	1	39	5	...	...
1902	540	11	67	14	33	4	18	2
1903	377	4	308	17	17	2	12	...
1904	326	7	310	20	24	2	2	...
1905	426	16	271	13	...	...	25	5
1906	433	12	314	20	3	1	28	2
1907	405	15	387	34	4	...	58	1
1908	197	4	516	28	11	...	41	3
1909	420	9	359	14	6	...	63	5
1910	572	10	285	18	13	...	74	1
1911	492	5	292	20	52	3	94	9
1912	333	5	358	28	32	1	61	2
Totals	5,585	128	3,554	239	270	19	481	30
Average Fatality per cent.	2.2		6.3		6.5		5.8	

NOYER'S HILL HOSPITAL.

Medical Attendant's Report for the year ending
December 31st, 1912.

SMALL-POX.

During the year 75 cases were admitted—the first case on January 26th, and the last August 16th.—including a case sent in for observation on August 31st. The Hospital was empty of Small-pox from September 11th to November 30th, when a mild case was admitted, that of a seafaring man, who remained until December 19th, and was then transferred, convalescent, to the Hospital Ship.

Of the 75 patients admitted: 10 were only suspicious and contact cases, and proved not to be Small-pox; 4 proved to be Chicken-pox; 1 Facial Herpes; and 1 Eczema and Strophulus.

Eleven cases were sent in for observation, having been exposed to infection. These cases were either all vaccinated immediately before or after admission to Hospital, and with but one exception such vaccinations were all successful, and that one developed a very modified abortive type of the disease. It was reported to have been vaccinated unsuccessfully four days before admission, and was again vaccinated unsuccessfully three days after admission.

Eight cases were sent in as suspicious or doubtful. These again, like all the others, were vaccinated, 1 ten days before admission, 1 six days after, and 1 two days after—the rest within 24 hours; 2 developed mild discrete, and 5 very modified and abortive attacks.

NOVERS HILL HOSPITAL.

1912.

Summary of Cases.

SMALL-POX.															SUSPICIOUS OR OBSERVATION CASES.				
Ages arranged in Groups.	Number of Cases.	TYPE OF DISEASE.				VACCINATION.				DEATHS	Number of Cases.	VACCINATION.							
		Abortive or Modified.	Discrete.	Confluent.	Hæmorrhagic.	In Infancy.	Not Vaccinated.	Re-Vaccinated.	In Infancy.			Not Vaccinated.	Re-Vaccinated.						
5 years and under	6	2	3	1	0	2	4	0	2	3	1	2	0						
Over 5 years to 20 years	15	6	5	4	0	5	8	2	0	9	3	6	0						
20 to 40	20	9	10	1	0	19	1	0	0	4	4	0	0						
Over 40	18	3	11	3	1	16	1	1	1	0	0	0	0						
TOTALS...	59	20	29	9	1	42	14	3	3	16	8	8	0						

THREE DEATHS OCCURRED :—

One was a man, aged 54; one an infant, aged 15 months, both unvaccinated; the third a child, aged 2 years, also unvaccinated—a heavy, discrete case suffering with Pnenmonia at the time of admission.

As usual, with but one exception, there are no complications or sequelæ of any importance to report. Small-pox in this respect is the most favoured of all the zymotic diseases.

The one exceptional case referred to was that of a deaf mute, aged 34, who during convalescence was seized with most violent delirium, assuming later the character of religious mania, requiring two attendants day and night to watch him. I have known cases of equally violent delirium before but they are rare and generally quickly recover or as quickly die. This poor fellow was removed to an Asylum as soon as it was possible to do so.

AVERAGE DURATION OF DETENTION IN HOSPITAL.

Cases cured, transferred to ship or died—21 days.

Contact, or doubtful, admitted for observation—13 days.

Twenty-one days' average detention is a very short period and is accounted for by the number of patients transferred to Hospital Ship, by patients being admitted when the disease was practically over, and lastly owing to deaths.

TYPE OF DISEASE.

On the whole was very mild, but it was the type that is the most insidious and treacherous causing the greatest anxiety, many of the cases being of such an exceedingly modified form as often to make it very difficult for even medical practitioners of large experience to be able to diagnose and form an absolutely positive opinion, and herein lies the difficulty; because if such cases happen to be

overlooked they are more than likely to spread infection and give rise to what might become a serious epidemic of more virulent type. Here is a case in point :—A. H., age 10, one of a family suffering from the disease, was running about the street and brought to the Hospital for bathing and to have his clothes disinfected. On closer examination one little Small-pox papule was found on forehead. Vaccination in infancy showed 3 very large marks.

In conclusion I feel it incumbent on me to express my most sincere thanks to Dr. Davies and Dr. Heaven for the very courteous and kindly way they have assisted me in my duties, more especially for their valuable help in cases of difficult diagnosis. To the Nursing Staff I am also indebted, their work has been done assiduously, and with an unusual amount of interest.

SCARLET FEVER.

During the Year the Hospital was twice emptied of Scarlet Fever to make room for Small-pox. The first time on the 15th and 16th of January, and was continued to be occupied by Small-pox patients until the 11th September following, when all the Wards received a thorough cleansing and disinfection before the next cases of Scarlet Fever were admitted on the 28th of October, and continued to be so used until the 1st of December, when a single case of Small-pox was admitted from a steamship off Avonmouth, as already stated in my report, and the Hospital had again to be suddenly emptied of Scarlet Fever. The Small-pox case was transferred to the Hospital Ship, and after about three weeks the Wards were again used for the reception of Scarlet Fever on December 20th.

There were remaining in Hospital from the year 1911, 21.

At the close of the year ending December 31st, 1912, there were remaining under treatment, 28. Admitted

during the year 1912, 48. Some of these were transferred to Ham Green, and others were in due course discharged cured. No deaths took place during the year.

Vaccination of Scarlet Fever Cases.

LARGE OR VERY GOOD MARKS—

1 had 5 good marks.
 3 „ 2 „ „
 7 „ 3 „ „
 4 „ 2 „ „
 1 „ 1 extra large.

MODERATE OR MEDIUM—

1 had 3 marks.
 3 „ 2 „
 2 „ 1 „

SMALL AND POOR—

1 had 3 poor marks.
 6 „ 2 „ „
 4 „ 1 „ „
 1 „ 1 very indistinct

14 not vaccinated.

The complications or sequelæ were of the usual character viz :—

- 3 Cardiac trouble.
- 1 Rheumatism.
- 11 Rhinitis or Rhinorrhæa
- 6 Otorrhœa.
- 1 Glandular Abscess.
- 3 Nephritis.
- 2 Contracted Scarlet Fever in Hospital.
- 1 Developed Whooping Cough.
- 1 Psoriasis and 1 Bronchitis

Seven cases were marked as doubtful; but, as they were suddenly transferred to Ham Green, no note could be made as to desquamation.

Four cases admitted proved not to be Scarlet Fever and had no sign of desquamating.

Swabs were taken of all cases presenting suspicion of Diphtheria when it was found 3 had aural and 7 nasal Diphtheria.

G. C. PAULI, M.R.C.S., L.R.C.P.

Medical Attendant.

CITY HOSPITALS—Comparative Statement of Expenditure.

Novers Hill.				Ham Green.			
Year ending 25th March, 1912		Year ending 25th March, 1913		Year ending 25th March, 1912		Year ending 25th March, 1913	
£	s. d.	£	s. d.	£	s. d.	£	s. d.
Salaries and Wages :—							
Medical Superintendent	50 0 0	50 0 0		50 0 0		50 0 0	
Medical Officer	200 0 0	200 0 0		224 3 2		249 3 2	
Special Services as <i>locum tenens</i>		8 8 0		13 16 0		21 0 0	
Medical Consultations				10 10 0		27 6 0	
Matron	68 10 10	63 11 10		108 0 0		108 0 0	
Nurses, Officers and Servants	800 5 1	946 1 3		2217 8 3		2175 17 9	
Contribution to Workmen's Compensation Fund	3 10 8	3 6 1		9 5 0		9 3 2	
Do. Health Insurance by Corporation		12 15 2				35 2 7½	
PROVISIONS, viz :							
Meat	144 1 8	158 5 4		467 18 11		497 11 0	
Fish and Ice	32 1 6	25 4 1		79 14 5		59 0 9	
Poultry and Game	8 1 8	10 7 2		23 10 10		24 11 8	
Bread and Flour	40 9 1	39 7 8		169 10 11		172 14 5	
Milk, Butter and Eggs...	146 16 4	154 16 4		579 19 1		557 0 4	
Groceries	113 10 1	79 15 9		393 6 10		328 17 1	
Vegetables and Fruit	14 3 2	17 3 3		213 6 7		246 16 4	
Wine and Spirits	1 2 6			6 12 6		3 8 8	
Mineral Waters	1 0 0	1 6 11		6 10 6		3 12 6	
Tithe Rent, Rates and Insurance	218 17 4	227 12 1		473 1 3		472 15 11	
Rent of Telephone	10 10 0	10 10 0		41 0 0		41 0 0	
Rent of Cottage				5 5 10		15 0 0	
Coal and Firewood	147 1 9	176 14 7		565 8 8		558 16 8	
Water, and Hire of Meter	29 5 0	34 7 0		208 5 0		184 13 0	
Gas	70 0 3	81 0 8					
Cleaning Materials, Baskets, and Sweeping Chimnies...	57 13 2	59 8 10		133 18 9		231 8 0	
Crockery, Cutlery and Glass	7 5 9	4 18 7		20 10 2		16 13 0	
Linen, Drapery, and Uniform Clothing	85 10 2	83 9 7		187 8 4		205 3 9	
Furniture, Fittings, and Bedding	6 15 11	19 16 6		5 14 4		32 3 1	
Blankets				130 9 0		58 13 0	
Purifying Mattresses						11 9 6	
Drugs and Chemicals	32 0 2	35 11 6		211 10 9		271 16 7	
Maintenance of Battery				30 0 0		30 0 0	
Electrical Fittings. Inspection of same, etc.				38 9 5		47 13 4	
Painters' Work and Structural Repairs	110 10 11	6 1 7		244 17 4		157 5 0	
Plumbers' Work	12 13 10	12 10 7					
Ironmongery, Fittings and Repairs	50 8 9	62 12 8					
Cement Work and Structural Alterations	0 15 0						
Extension of Lodge							
Repairs to Chimney							
Lathe and Fittings							
Hot Water Tank	17 5 0						
New Boiler							
Baths and Fixing							
Mould, Seed, Plants and Manure, etc.	20 3 9	12 10 0					
Planting Shrubby							
Hauling and Cab Hire	12 4 7	23 11 8					
Carriage of Goods, and Bridge Tolls							
Railway and Tram Fares							
Removal of Bodies							
Printing, Stationery, and Advertising	11 5 2	18 13 0					
Papers, Periodicals and Books	4 12 10	4 18 1					
Postage and Contract Stamps	8 15 3	9 3 8					
Toys and Decorations	2 17 8						
Incubator							
Pigs, Fowls, Ducks, Eggs, etc.	6 1 4	2 0 3					
Removing and Killing Pigs							
Medical Attendance and Maintenance of Convalescent Patients. Hospital Ship	20 12 11	11 4 11					
Food, etc., for Pigs and Fowls	22 15 9	71 5 7					
Contribution towards Expenses of Dance							
Petty Disbursements	6 1 5	13 1 2					
£2596 6 3				£2775 16 6			
TOTAL EXPENDITURE IN THE YEAR				£7264 0 0			
				£7425 18 9½			

J. CROMPTON, F.S.A.A., City Accountant.

Number of Patients in the Year	...	148	148	951	1007
Total Cost per week for each Patient, including all the Working Expenses	...	s. d. 31 1	s. d. 83 4½	s. d. 25 3	s. d. 26 8½

* Smallpox only for 7 months in the year.

PART IV.

REPORT OF THE CHIEF INSPECTOR OF NUISANCES.

PUBLIC HEALTH DEPARTMENT,

40 PRINCE STREET,

February, 1913.

1912.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH
COMMITTEE.

GENTLEMEN,

I have once again the honour of submitting the following brief report, with summaries, showing the amount of work effected in this Department during the year 1912.

The complaints and applications received at the Office numbered 1515, as against 1619 in the previous year (a decrease of 104, all of which were duly enquired into as quickly as possible, and wherever a nuisance existed, steps were immediately taken for its abatement. In 340 instances no nuisance was found, so that no action was necessary; this works out at 21·78 per cent. of the whole. Last year the number equalled 22·79 of the whole. A considerable number of the applications were from persons changing residence who wished to have some guarantee that the house they proposed to take was in good sanitary condition, and in this way a considerable amount of good work has been accomplished. People will not take a house when the drains, etc., are known to be defective, and the owners prefer doing whatever is necessary to losing the prospect of a tenant. The public also now recognise that complaints are always treated as strictly confidential.

1,667 cases of notifiable infectious disease, such as Scarlet Fever and Diphtheria, were duly enquired into by the District Inspectors and the results entered on the case cards as required by the Medical Officer of Health. This is a decrease of 365 on the number notified last year (2,032). 5,361 visits were made to infected houses, as in many instances the cases nursed at home require frequent visiting. When children attend the Elementary Schools, cards are made out and sent to the Head Teacher of the School, as well as to the School Medical Officer of the Education Committee, and this entails a considerable amount of clerical work, as three cards are required for each case.

2,008 infected houses were disinfected, and 46,291 articles of bedding, clothing, &c., removed, disinfected by steam, and returned to the houses. 985 similar articles were destroyed, their condition being such that disinfection was impossible.

The clothing of patients removed to Ham Green and Novers Hill Hospitals is not included in the above totals, as the Hospitals are both equipped with a Washington Lyons Steam Disinfector.

Non-Notifiable Infectious Diseases, such as Measles, Whooping-Cough, Chicken Pox, Mumps, &c., were also visited on receipt of notification from the Elementary Schools that certain children were absent from school in consequence of any of these diseases. 3,409 visits were thus paid, and leaflets of precautions given to the parents. In acute cases the parents were advised to secure proper medical attendance, and often did so. Disinfection is also offered and carried out wherever considered advisable, or of any practical use.

Small-pox.

This disease was introduced into Bristol in the early part of January from over sea, and caused a considerable amount of work for the various District Inspectors until the Autumn, although the whole number of cases resulting was only 62. The number of Contacts to whom visits were paid was 3,301. A very considerable number of these Contacts were working men who were not at home all day, they had to be visited during the evening as it was not considered advisable for the Inspector to go to their places of work; other men working with or near such Contacts were kept under observation without their knowing it until all danger was past. The visits to see the known Contacts were continued in most cases from 16 to 21 days.

PHTHISIS.

This terrible disease is still very much in evidence, 1,093 fresh cases having been notified during the year, and every case, except where the medical attendant did not desire it, has been visited by the District Inspectors and careful notes made of the conditions of the homes and surroundings.

The number of deaths during the year was 402, 8 less than last year.

Disinfection of rooms, bedding, &c., is carried out in all cases after death or removal from one house to another, and in acute cases whenever considered necessary, and disinfectants are also supplied gratuitously to the poor patients for sputum flasks. The continued visiting of these cases is very depressing, and I hope that the energetic action now being taken throughout the Country may have the effect of, at least, reducing the prevalence of this disease.

NOTICES TO ABATE NUISANCES.

1,797 informal or preliminary notices were served, and as usual were so successful that only 222 statutory notices were required to enforce compliance with the informal notices. These statutory notices were all complied with except two. These two were summoned; but before the day of hearing the work was done and the cases withdrawn on payment of costs.

In addition to the written notices, a considerable number of verbal requests were made to property owners, with satisfactory results.

Drain testing has again occupied a considerable portion of the Inspectors' time, the smoke test having been applied 1,309 times, besides a large number of water and chemical tests.

A summary of the work effected by the whole of the Inspectors is appended (Table I.).

By arrangement with the Board of Guardians the Masters at each of the Workhouses have for some time past given notice to the Medical Officer of Health of the removal, for burial by friends or relations, of the bodies of persons dying in the Workhouses. These notices give particulars as to where the body has been taken, together with the name and address of the undertaker. Your Inspectors then see that the body is not kept about for any length of time, as was often the case previously, chiefly for the purpose of going round with the hat. 280 intimations of these removals were received during the year.

Houses Let in Lodgings or Tenement Houses.

279 May Notices for Limewashing and Cleansing of these houses were served in accordance with the Bye-Laws, and resulted in the cleansing of 843 rooms and 152 passages and stairs. A considerable number of these houses have been taken off the register for various

reasons and others are now being inspected and measured up to take their place.

Smoke Abatement.

One hundred and thirty-eight observations have been made during the year, each observation taking at least an hour. The action taken by this department, chiefly a verbal notice combined with practical advice, has resulted in the abatement of 8 nuisances from the emission of black smoke, and the fixing of appliances for such abatement is now in hand.

Combined or Party Drains.

Sixteen combined or party drains running under private property to which the drains of 115 houses were connected, have been re-laid during the year, action being taken under Section 41 of the Public Health Act, 1875, and Section 34 of the Bristol Corporation Act, 1905, the cost of the work being apportioned amongst the owners by the City Surveyor.

Slaughter Houses.

The Slaughter Houses in the City now number, 96, 3 less than last year, 4 having been struck off the Register during the year, two of these were old Permanent Licences and two were Annual Licences. One new Annual Licence has been granted. There are now 58, with the old Permanent Licences, 35 Annual, one for Foreign Animals at Avonmouth and two Knackers' yards.

These are all visited at irregular but frequent intervals by the two Urban Meat Inspectors, Messrs. Thomas and Gitsham, those for the slaughter of bacon pigs being visited daily. During the year these two Inspectors were responsible for the destruction of 41 tons 16 cwt. 9 qrs. and 2 lbs. of meat of various kinds consisting of

the entire carcasses of 19 Beasts, 21 Sheep, 102 Pigs, 1 Calf, and 3 Lambs, the remainder being parts of carcasses and odd pieces of meat, also 236 head of Poultry and Game, 75 Rabbits, 763 packages of Fish (not weighed), 933 of Vegetables and 265 of Fruit, all of which was unfit for food and was voluntarily surrendered to them without any trouble.

The Limewashing and Cleansing of the Slaughter Houses, as required by the Bye-Laws, has been so well carried out that no Statutory notice was required. Many improvements in the internal arrangements have been effected, particular attention being given to floors and paving.

It must be quite obvious that two Meat Inspectors cannot possibly be at all these private Slaughter Houses at the time of killing, scattered as they are throughout the City and miles apart. It is thus apparent that many carcasses escape inspection until they get to the shops, where the offal is not taken as a rule. It is, however, with much pleasure that I again bear testimony to the helpful manner of the majority of the butchers and bacon curers in the City, who, when they have a doubtful carcass and an Inspector is not in the neighbourhood, telephone to the Office for one to come at once : this he does and his decision as to the condition of the carcass is final. I must again express my regret that apparently there is no prospect of the provision of Public Abattoirs.

Housing, Town Planning, &c., Act, 1909.

The work in connection with this Act has been continued during the year on the same lines as in the two previous years, but not to the same extent as last year in consequence of the District Inspectors being so much occupied in connection with an outbreak of Small-pox, the visits to contacts with which were so

many during the first eight months of the year, that very little time was available for House Inspection. A reference to the tables will show exactly how many houses were inspected and dealt with during the three year ending December 31st, 1912. 2,415 houses have been inspected under this Act. Of these, 1829 were found to be more or less defective; 586 no action was necessary; 133 were been closed by order; 139 closed voluntarily; 1,526 made habitable; and 31 remain to be dealt with. In dealing with these houses, it is not that so much time is taken up by the actual inspection of them, but it is the making out and serving notices on the owners of those found to be defective and then the continual re-visiting to see that the work of putting them in repair is carried out in a satisfactory manner. In addition to those enumerated above, a considerable number of small houses have been closed and demolished for various reasons, so that people who are now being turned out of houses which are closed as unfit for habitation have great difficulty in getting other houses in which to live.

The systematic inspection is still going on, and must, of course, result in a large number being closed; but there is no sign of others being constructed to take their place.

Factory and Workshop Act, 1901.

I am pleased that I can again report that the work in connection with this Act has been carried on most amicably between H.M. Inspectors of Factories and this department. The workshops now registered are 1518, an increase of thirty-five from last year but the numbers vary very considerably from year to year. The appended summary table and Medical Officer of Health's report on the Factory and Workshop's Act shows that 445 nuisances of various kinds were found and abated during the year and 2,681 visits were paid.

The houses of 850 outworkers were visited, in which 20 minor sanitary defects were found and successfully dealt with under notice either written or verbal, but in these cases a verbal notice given in a kindly manner is generally sufficient. 26 intimations of Sanitary defects found in factories were received from H.M. Inspectors, and 8 of protected persons found in factories were sent to them from this department.

Offensive Trades.

Offensive trades have received the usual attention, 41 Nuisances of various kinds found to exist have been abated under notice either written or verbal, generally accompanied by some suggestion for the adoption of improved method to prevent recurrence. These suggestions are generally received in the spirit in which they are given.

The Limewashing and general cleanliness of the walls and floors are specially looked after.

Dairies, Cowsheds and Milk Shops.

Inspector Leat has again been very energetic in carrying out the duties in connection with these places which require great tact, combined with firmness and courtesy. He has thus been able to effect great improvements in every direction, without being in any way aggressive. The lighting, ventilation, paving, water supply and general cleanliness of cowsheds have been extremely well looked after during the year. There are now 43 cowsheds, with accommodation for 930 cows within the city boundaries.

The dairies and the large milkshops gave very little trouble, but the small general shops where milk is retailed in very small quantities require a large amount of attention, as, generally speaking, the milk is stored and sold under conditions which are not at all compatible with cleanliness, and I hope that in the near future the storage and sale of milk will be prohibited in all shops except those used for dairy products only.

Probably the new Milk Bill now being brought forward in the House of Commons will deal with this matter.

During the year Inspector Leat has taken 24 samples of milk for Tuberculosis examination. Ten of these were taken at the City Dairies on arrival of the milk by road, 10 at the railway stations, and four at the City cowsheds on completion of the early morning milking. 22 of these show no evidence of Tuberculosis infection, and the results of 2 have not yet been received.

He has also given a considerable amount of attention to premises where ice-cream is manufactured and sold, particular attention being given to the cleanliness of premises, utensils, and means of storage.

Common Lodging Houses.

There are now 43 of these houses in the City, most of which are very old requiring constant supervision, with accommodation for 1,550 persons in 231 rooms, viz., 1,463 men, 45 single women, and 21 married couples. These figures include the Municipal Lodging House, two Salvation Army Shelters, and one Church Army Shelter. These last four accommodate about 400 persons.

The old lodging houses are so well looked after by Inspector Dimond, in regard to general cleanliness, and sanitary conveniences, that no legal proceedings

have been necessary during the year, but several of them can be very well done without.

In concluding my report I feel that I must express my gratitude to the Health Committee for the support always given me in the discharge of my duties. To the Medical Officer of Health, Dr. Davies, for invaluable advice and assistance, always so courteously and kindly given. I also desire to express my appreciation of the manner in which the Staff of Inspectors discharge their duties. They work together like a machine, for the betterment of the sanitary conditions of the City and the health of the citizens.

My thanks are again due and are hereby gratefully tendered to the Town Clerk and his Assistants, and to the City Engineer and his Staff for much valuable advice and assistance.

I am, Gentlemen,
Your obedient Servant,
JAMES W. KIRLEY,
Chief Inspector of Nuisances

**Summary of Nuisances Abated and Work done under the Supervision
of the Inspectors in the Health Department during the
Year ending December 31st, 1912.**

Prepared by the Chief Inspector of Nuisances.

NATURE OF WORK.	By District Inspectors.	By Inspector of Dairies, &c.	By Inspector of Work- shops, &c.	By Inspector of Tenement Houses, &c.	By In- spectors of Slaughter Houses, &c.	By Inspector of Common Lodging Houses.	By Inspector of Bake- Houses.	Total.
Visits and Re-visits — —	37128	3262	2681	3308	19591	315	1257	67542
Drains relaid — —	347	8	9	14			2	380
Do. partially relaid — —	712	20	23	28	2		4	789
Sink troughs fixed — —	612	8	8	9	1			638
Sinks, drains, &c., trapped — —	1281	48	26	35	4			1394
W.C.'s fitted with new pans, &c. — —	723	17	45	69			1	854
Do. repaired and cleansed — —	231	12	33	53		9	3	341
Do. fitted with flushing appliances — —	221	13	45	49		4		332
Additional W.C. accommodation — —	37		26	1				64
Premises repaired — —	588		5	182				775
Roofs repaired — —	445	24	4	38		2	7	520
Yards, &c., paved, floors repaired — —	890	58	17	48	8		10	1040
Rooms cleansed, papered, &c. — —	1396		132	843				2371
Passages do. — —	286		5	152				443
Cesspools abolished — —	35							35
Offensive deposits removed — —	115	44	2	14	11	1	2	189
Manure pits, refuse bins provided — —	7	2		5				14
Keeping of Pigs, &c., prohibited — —	23	2		5				30
Polluted Wells closed — —	8	1						9
Company's Water provided — —	64	3	2					69
Overcrowding nuisances abated — —	54		3	26				83
Dairies, &c., improved — —		32						32
Workrooms better ventilated — —			7					7
Offensive Trades, nuisances abated — —			41					41
Smoke nuisances do. — —			8					8
Limewashing, &c., secured — —		344			8	80	310	742
Other nuisances abated — —	330	36	4	19	2	20	47	458
TOTALS — —	8414	672	445	1589	36	116	386	11658

No. of Complaints received and attended to	—	—	—	1515
" Offensive Trades visited	—	—	—	102
" Smoke observations taken	—	—	—	138
" Times smoke test applied to drains	—	—	—	1309
" Notices served, informal	—	—	—	1797
" Formal Notices and Orders	—	—	—	315
Half-yearly Cleansing Notices served, Common Lodging Houses	—	—	—	142
" " " " Bake-Houses	—	—	—	181
" " " " Dairies, Cowsheds, &c.	—	—	—	293
" " " " Slaughter Houses	—	—	—	184
Yearly " " " " Tenement Houses	—	—	—	279
No. of Visits to Houses re infectious disease	—	—	—	5361
" Houses disinfected after infectious disease	—	—	—	2008
" Articles of Bedding, &c., removed and disinfected	—	—	—	46291
" " " " and burnt	—	—	—	985
Total number of articles dealt with	—	—	—	47276
Weight of Meat destroyed as unfit for food	—	41 tons 16 cwt. 0 qrs 2 lbs.		

JAMES W. KIRLEY,
CHIEF INSPECTOR OF NUISANCES.

TABLE 2.
Summary of Work effected in the Health Department during Twelve Years—1901-1912.
Prepared by the Chief Inspector of Nuisances.

TABLE SHOWING THE NUMBER OF NUISANCES ABATED AND OTHER WORK DONE IN EACH YEAR
 SINCE 1901.

	1901	1902	1903	1904*	1905	1906	1907	1908	1909	1910	1911	1912
Number of Nuisances abated	10,151	10,482	10,542	11,007	12,232	10,313	10,369	9,657	9,364	8,742	13,290	11,658
Polluted Wells closed...	19	21	11	8	22	15	8	3	3	5	14	9
Premises supplied with Co.'s Water	83	65	47	51	91	50	44	33	34	49	97	69
Houses disinfected ...	2,652	3,130	2,866	2,229	1,950	2,070	2,057	1,759	1,726	2,089	2,080	2,008
Articles of Bedding &c., disinfected or destroyed	66,626	68,330	63,919	52,813	53,488	51,026	46,137	39,841	45,286	47,444	51,713	47,176

* Enlarged City.

HOUSING, TOWN PLANNING, &c., ACT, 1909.

TABLE 3.

PARTICULARS OF ACTION TAKEN.											
Year.	No. of houses inspected.	Found defective.	No action taken.	Made habitable	Out-standing at end of year.	Reported as unfit for habitation.	Closed.		Closing Orders determined.	Demolished.	
							Under Order.	Volun-tarily.		Under Order.	Volun-tarily.
1910	611	402	209	235	94	44	18	56	...	.	25
Houses outstanding end of 1910 :—											
1911	1351 and 2 rooms.	1019 and 2 rooms.	332	794	118	94 and 2 rooms.	72 and 2 rooms.	33	3	...	33
Houses outstanding end of 1911 :—											
1912	453	408	45	314	31	35	27	36	7	...	11
Total	2415 and 2 rooms.	1829 and 2 rooms	586	1,526	...	173 and 2 rooms.	133	139	10	None	69

TABLE 4.

Year	DAIRIES AND MILKSHOPS.			COWSHEDS.	
	Number Inspected.	Defects Found.	Discontinued.	Number Inspected.	Defects Found.
1890	545	157	100	35	19
1891	858	472	115	36	13
1892	1,805	285	108	Number of Inspections. 1,173	33
1893	1,751	161	126	1,069	45
1894	1,880	189	56	1,089	41
1895	1,964	145	53	1,587	31
1896	1,972	136	62	2,426	39
1897*	2,058	97	50	2,063	55
1898	2,075	121	65	2,466	19
1899	2,187	101	73	2,499	33
1900	2,142	43	78	2,347	30
1901	1,964	89	120	2,184	33
1902	1,968	78	100	2,620	31
1903	1,809	72	93	2,049	39
1904†	1,558	117	100	2,340	36
1905	1,476	140	39	2,453	37
1906	1,476	83	97	2,340	38
1907	1,471	107	47	2,379	40
1908	1,450	72	20	1,875	13
1909	1,100	41	27	1,114	12
1910‡	937	38	14	340	25
1911	2,342	76	37	533	20
1912	2,765	581	22	497	15

* City enlarged in November, 1897.

† City enlarged in October, 1904.

‡ From June only.

City of Bristol.

FACTORY AND WORKSHOP ACT, 1901.

REPORT OF THE MEDICAL OFFICER OF HEALTH ON THE
ADMINISTRATION OF THE ACT IN THE CITY OF BRISTOL
DURING THE YEAR 1912 (Sec. 132, F. & W. Act, 1901).

Workshops.

The Factory and Workshop Act (1891) transferred the Sanitary control of "Workshops" and "Workplaces" from the Inspector of Factories to the City Council acting as the Urban Sanitary Authority.

A special Inspector of Workshops was appointed, Workshops were at once placed on the Register and inspected, and this control has been continuously exercised since its commencement up to the present. Upon the extension of the City in 1897, a second special Inspector of Workshops was appointed; in October 1910, one of these Inspectors was transferred to District work. The progress of the work year by year, is shown in the following table :—

TABLE I.
CITY OF BRISTOL,
Workshops.
 Showing particulars in regard to the Inspection of Workshops since 1891.

Year.	Population of City.	No. of Workshops on Register.	No. of Nuisances abated.	Visits and Revisits.	Particulars sent to H.M. Inspector.	Communications received from H.M. Inspector.
1892	223,592	134	215	970	—	5
1893	225,028	349	568	2377	303	15
1894	226,578	584	644	2188	128	18
1895	228,139	764	558	1978	29	32
1896	230,623	881	578	2456	10	35
1897	232,242	1042	660	2674	14	19
CITY ENLARGED.						
1898	316,900	1123	1203	4943	16	21
1899	320,911	1602	1117	4494	37	16
1900	324,973	1800	1004	4263	13	15
1901	329,086	1846	1005	4875	12	25
1902	334,632	1872	1187	5480	21	62
1903	338,895	1532	1110	5885	39	71
1904	343,204	1537	1237	5563	45	88
CITY ENLARGED.						
1905	358,515	1611	1366	4973	25	52
1906	363,223	1652	1058	5141	14	37
1907	367,979	1611	1305	5224	36	63
1908	372,715	1740	1306	5595	19	50
1909	377,642	1852	1154	5947	12	41
1910	387,511	1874	1325	5443	12	14
1911	357,509	1483	701	2685	8	22
1912	359,400	1518	445	2681	16	26

The details of work secured during the year 1912 are shown in the following table:—

TABLE 2	Workshops.	CITY OF BRISTOL.	
Work secured by the Special Inspector of Workshops, etc., in the City of Bristol, during the year 1912.			
Total Visits and Re-visits	2,681
Total Nuisances abated	445

PARTICULARS OF NUISANCES DEALT WITH.			
DRAINAGE AND FILTH NUISANCES	{	Drains entirely relaid	... .. 9
		Drains partially relaid	... .. 23
		W.C.'s fitted with new pans	... .. 45
		W.C.'s cleansed and amended	... .. 33
		W.C.'s fitted with flushing appliances	... .. 45
		Additional W.C. accommodation pro- vided	... .. 26
		Sinks, Drains, etc., trapped	... .. 34
		Offensive Deposits removed	... .. 2
STRUCTURAL DEFECTS	{	Defective Roofs repaired	... .. 9
		Yards paved or Floors repaired	... .. 17
LIMEWASHING AND CLEANSING	{	Workrooms and Passages, lime- washed and cleansed	... .. 137
VENTILATION AND OVERCROWDING	{	Nuisances from overcrowding abated	... .. 3
		Better Ventilation secured in Work- rooms	... .. 7
WATER SUPPLY	{	Company's Water provided	... .. 2
		Other Nuisances	... .. 53

Home Work.

(SECS. 107 TO 115).

The following table shows particulars with regard to the lists of Outworkers received during the year 1912. The lists are kept by the Town Clerk, who forwards to the Medical Officer of Health the names and addresses of those Outworkers who reside within the District of the City of Bristol.

TABLE 3.

CITY OF BRISTOL.

Workshops.**OUTWORKERS.**

Showing Lists received during the year 1912

Nature of Employment.	February Lists.		August Lists.	
	No. of Lists.	No. of Outworkers.	No. of Lists.	No. of Outworkers.
Boot and Shoe Making	19	290	12	128
Cabinet Making, etc.	1	3	1	3
Manufacture of Wearing Apparel	46	1234	30	922
Other Trades ...	3	20	2	19
	69	1547	45	1072

Upon receipt of the lists of Outworkers the Workshop Inspector visits the premises as far as possible in conjunction with his work under the other provisions of the Act. The number of premises visited in 1912 was 850, and 63 sanitary defects were found to exist, which were rectified under written notice. In addition to the defects referred to above, the premises of 75 outworkers

were lime-washed and cleansed at the verbal request of the Inspector. In 16 instances it was found that wearing apparel was being made, cleaned, or repaired in the houses where one of the inmates was suffering from an Infectious Disease (Sec. 110), but no action was required to be taken under this Section. The wearing apparel was in each instance disinfected before return to the factory. All such conditions as are specified in Sections 109 and 110, have, since the adoption of the Notification Act in 1890, been most carefully guarded against by a complete system of administering the Notification and Public Health Acts, in which these questions have always received special attention.

Factory and Workshop Act, 1901.

Inspection of Bakehouses for the year 1912.

REPORT OF THE INSPECTOR IN RESPECT OF WORK DONE UNDER THE PROVISIONS OF THE ABOVE ACT, WITH PARTICULARS OF THE CONDITIONS FOUND.

The number of Bakehouses in operation at some period of the year was 321, or 14 less than in 1911.

Inspection operations under the provisions of the Act of 1884 were commenced in that year, and have been regularly continued since.

This year 1,257 Inspections of Bakehouses have been made, an increase of 119 upon 1911.

It was found that the Limewashing Regulation had not been so strictly carried out to time as usual, and 181 requirements had to be made for this to be done, which was an increase of 33 upon the previous year.

Defaults in general cleaning of floor, fittings, utensils, etc., decreased in number from 48 to 39.

A higher standard is constantly urged where necessary in this respect, and with success, except in a few cases which are now under observation.

The number of dilapidations of floors, roofs, paving, etc., noted was 17, a decrease of 4, but nuisances from dampness, rainwater pipes, accumulations of rubbish, manure, etc., increased from 2 to 16.

Improved ovens have frequently been installed, with flour and dough mixers, whereby much cleaner and purer atmospheric conditions are obtained, with less labour, where this has been done.

The general Sanitary conditions have been well maintained, and in some places improved.

The number of Bakehouses that come within the provisions of the Underground Bakehouse Act, in use is the same as last year, i.e. 29, but only 16 of these are totally underground, the remainder being only partially so.

All the notices, numbering 244, were complied with, or were in hand at the end of the year.

I am, Gentlemen,

Yours obediently,

S. O. DIMOND,

Inspector of Bakehouses.

CITY OF BRISTOL.

Workshops.

TABLE 4.

BAKEHOUSES.

Showing defects found and remedied in each year since bakehouse inspection was instituted.

Year.	Particulars.	Total.
1884	Total contraventions found in respect of cleansing, lime-washing, defective drains, repairs and defective ventilation.	342
1885	Ditto	244
1886	Ditto	96
1887	Ditto	132
1888	Ditto	69
1889	Ditto	65
1890	Ditto	89
1891	Ditto	80
1892	Ditto	71
1893	Ditto	36
1894	Ditto	57
1895	Ditto	74
1896	Ditto	57
1897	CITY ENLARGED IN 1897.	140
1898	Ditto	178
1899	Ditto	168
1900	Ditto	172
1901	Ditto	151
1902	Ditto	198
1903	Ditto	192
1904	CITY ENLARGED Including special work required in underground bakehouses.	250
1905	Ditto	230
1906	Ditto	232
1907	Ditto	281
1908	Ditto	205
1909	Ditto	246
1910	Ditto	201
1911	Ditto	232
1912	Ditto	244

TABLE 5
Table of Bakehouse Inspection for the Year.

With particulars of Condition, Contraventions, Action taken, and Results

1912.

Total Defects.	Nature of Defects, etc., and Improvements secured.	Total Notices	Description of Notices Complied With.	Total Notices	Total Defects.
263	Contraventions of Lime-washing regulations Ditto General cleaning ... Bakehouse premises with defective drainage Ditto with defective floors, roofs, pav- ing, or other dilapidations ... Removal of Manure accumulations and other Nuisances ... Waterclosets reconstructed and Flushed ... Ventilation improved ...	181 39 6 17 16 3 1	Informal Notices given to abate nuisances, effect repairs, or comply with Regulations Various Written Notices served and complied with, or under way at end of the year ...	191 53	263
263	7 Drain tests were made	263		244	263
				244	263

PARTICULARS OF DEFECTS AND CONTRAVENTIONS.

S. O. DIMOND, *Inspector.*

FACTORY ACT.

HOME OFFICE FORM.

Annual Report of the Medical Officer of Health for the year 1912, for the City of Bristol.

on the Administration of the Factory and Workshop Act, 1901, in
connection with

FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK.

1.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

Including Inspections made by Sanitary Inspectors or Inspectors of
Nuisances.

Premises. (1)	Number of		
	Inspections (2)	Written Notices (3)	Prosecutions (4)
FACTORIES — — (Including Factory Laundries)	420	21	None.
WORKSHOPS — — (Including Workshop Laundries)	} 1411	} 42	None.
WORKPLACES — — (Other than Outworkers' prem- ises included in Part 3 of this Report)			
TOTAL —	1831	63	None.

During 1912, 382 nuisances and defects were remedied under verbal
notice.

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

Partieulars. (1)	Number of Defects.			Number of Prosecutions, (5)
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector (4)	
<i>* Nuisances under the Public Health Acts :—</i>				
Want of cleanliness	137	137	Re-employment of young persons 16	None
Want of ventilation	7	7		
Overcrowding	3	3		
Want of drainage of floors	None	None		
Other nuisanees	149	149		
Sanitary Accommodation :—				
Insuffieient	26	26		
Unsuitable or defective	123	123		
Not separate for sexes	—	—		
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bake-house (S. 101)	None	None	Re-employment of young persons 16	None
Breach of speeial sanitary requiremenes for bakehouses (SS. 97 to 100)	None	None		
Other offences	—	—		
(Excluding offenees relating to outwork which are included in Part 3 of this Report.				
Total... ..	445	445	16	None

* Including those specified in Sections 2, 3, 7 and 8, of the Factory and Workshop Act as remediable under the Public Health Acts.

NATURE OF WORK.*	OUTWORKERS' LISTS, SECTION 107.									OUTWORK IN UNWHOLESOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending lists.	Prosecutions.		Instances.	Notices served.	Prosecutions	Instances.	Orders made (S. 110).	Prosecutions (Sections 109, 119).
	Sending twice in the year.			Sending once in the year.				Failing to keep or permit inspection of lists.	Failing to send lists						
	Lists. †	Outworkers. †		Lists.	Outworkers.										
		Con-tractors	Work-men.		Con-tractors	Work-men.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Wearing Apparel—Making, &c.—															
(1) Tailoring	50		1839	19		187							16		
(2) Corset-making	4		76	3		54									
(3) Boot-making	20		237	11		181									
(4) Glove-making	—		—	1		2									
Wearing Apparel—Washing															
Furniture and Upholstery	2		6	—		—									
Sacks and Bag-making	—		—	—		—									
Brush-making	2		3	—		—									
Stationery	—		—	2		5									
TOTAL	78		2190	36		429	120	None.	None.	None.	None.	None.	16	None.	None.

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 5 as the case may be) against the principal class ONLY, but the outworkers should be assigned in columns 3 and 4 (or 6 and 7) into their respective classes. A footnote should be added to show that this has been done.

† The figures required in columns 2, 3 and 4 are the TOTAL number of the lists received from those employers who comply strictly with the statutory duty of sending two lists each year and of the entries of names of outworkers in those lists. The entries in column 2 must necessarily be EVEN numbers, as there will be two lists for each employer—in some previous returns odd numbers have been inserted. The figures in columns 3 and 4 will usually be (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated.

4—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number (2)
Important classes of workshops, such as workshop bakehouses, may be enumerated here :—	
Workshops	1518
Workshop Bakehouses	321
Total number of workshops on Register ...	1839

5.—OTHER MATTERS.

Class. (1)	Number (2)
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	16
Action taken in matters re-ferred by H. M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5).	Notified by H.M. } Inspector } Reports (of action } taken) sent to H. } M. Inspector }
Other	26
Other	26
Other	None
Underground Bakehouses (S. 101) :—	
Certificates granted during the year ...	None
In use at the end of the year—	
Underground ... 16 {	
Partially underground 13 {	29

NOTE.—The Factory and Workshop Act, 1901 (s. 132), requires the Medical Officer of Health in his Annual Report to the District Council to report specifically on the administration of that Act in workshops and workplaces, and to send a copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office). If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, workplaces or homework. The duties of Local Authorities and the Medical Officer of Health under the Act in 1901 are detailed in the Home Office Memorandum of December 1901. A further Memorandum on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health, in October 1906.

D. S. DAVIES, M.D., L.L.D.,

Medical Officer of Health.

I

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